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National Means Cum Merit Scholarship

Scholastic Ability Test

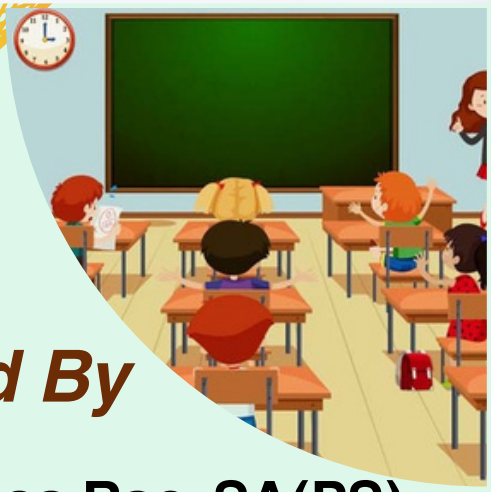
SCIENCE
35 MARKS

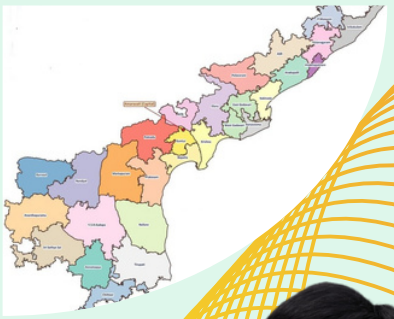




2026

Syllabus
7th class A.Y (2025 - 2026)
8th class A.Y (2026 - 2027)





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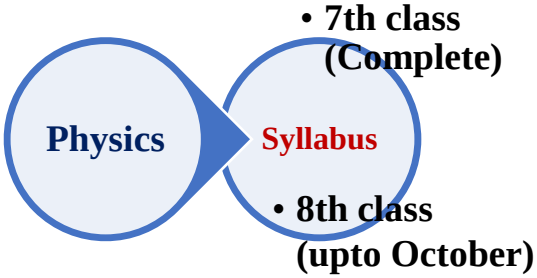
SCHOLASTIC APTITUDE TEST

Physics

91 -102 Questions

12 Marks



Chapter: Types of Forces

8th CLASS

1. A push or pull acting on an object is called
A) Energy B) Force C) Pressure D) Work
Ans: B) Force

2. Which of the following is an example of applying force by pulling?
A) Kicking a football B) Pushing a table
C) Pulling a drawer D) Hitting a ball
Ans: C) Pulling a drawer

3. A force can make a stationary object
A) Move B) Disappear
C) Become weightless D) Lose its mass
Ans: A) Move

4. Which of the following is NOT an effect of force?
A) Changing speed B) Changing direction
C) Changing shape
D) Changing the amount of matter in an object
Ans: D) Changing the amount of matter in an object

5. When a moving bicycle is stopped by applying brakes, the force mainly changes its
A) Shape B) Speed C) Mass D) Colour
Ans: B) Speed

6. When a batsman hits a moving ball and changes its direction, force changes the
A) Mass of the ball B) Direction of motion
C) Colour of the ball D) Temperature only
Ans: B) Direction of motion

7. Pressing an inflated balloon can change its
A) Mass B) Shape
C) Density only D) Chemical composition
Ans: B) Shape

8. Force comes into play due to
A) Interaction between objects B) Colour of objects
C) Size alone D) Temperature alone
Ans: A) Interaction between objects

9. If an object is at rest, it means
A) No force acts on it
B) The forces acting on it may be balanced
C) Gravity does not act on it D) It has no mass
Ans: B) The forces acting on it may be balanced

10. Which force requires physical contact between objects?
A) Magnetic force B) Gravitational force
C) Frictional force D) Electrostatic force
Ans: C) Frictional force

11. Muscular force is a
A) Contact force B) Non-contact force
C) Gravitational force D) Magnetic force
Ans: A) Contact force

12. Which of the following is an example of muscular force?
A) A magnet attracting an iron nail
B) A person lifting a box C) Earth attracting a stone
D) A charged balloon attracting paper
Ans: B) A person lifting a box

13. Muscular force is produced by
A) Muscles B) Magnets C) Earth D) Electric charges
Ans: A) Muscles

14. Friction acts
A) In the same direction as motion
B) Opposite to the direction of motion or attempted motion
C) Only vertically downward D) Only upward
Ans: B) Opposite to the direction of motion or attempted motion

15. A ball rolling on a floor eventually stops mainly because of
A) Magnetic force B) Friction
C) Electrostatic force D) Buoyant force
Ans: B) Friction

16. Friction generally becomes greater when surfaces are
A) Rougher B) Smoother
C) Completely separated D) Far apart
Ans: A) Rougher

17. Which of the following can experience friction while moving through air?
A) Aeroplane B) Stationary stone only
C) Book kept on a table D) Object in a vacuum
Ans: A) Aeroplane

18. Which one is a non-contact force?
A) Muscular force B) Frictional force
C) Magnetic force D) Force applied by hand
Ans: C) Magnetic force

19. When two like poles of magnets are brought close together, they
A) Attract each other B) Repel each other
C) Become neutral D) Stop exerting force
Ans: B) Repel each other

20. Unlike poles of magnets
A) Repel each other B) Attract each other
C) Have no interaction D) Always become charged
Ans: B) Attract each other

21. Magnetic force can act
A) Only when objects touch B) From a distance
C) Only in water D) Only in air
Ans: B) From a distance

22. A rubbed plastic scale attracting small pieces of paper demonstrates
A) Gravitational force B) Electrostatic force
C) Muscular force D) Frictional force only
Ans: B) Electrostatic force

23. When two similarly charged balloons are brought close together, they
A) Attract B) Repel C) Melt D) Become heavier
Ans: B) Repel

24. Electrostatic force is a
A) Contact force B) Non-contact force
C) Muscular force D) Frictional force
Ans: B) Non-contact force

25. The force by which the Earth attracts objects towards itself is called
A) Magnetic force B) Electrostatic force
C) Gravitational force D) Muscular force

Ans: C) Gravitational force

26. An object thrown vertically upward eventually comes back to Earth because of

A) Magnetic force B) Friction only
C) Gravitational force D) Electrostatic force

Ans: C) Gravitational force

27. Gravitational force is a

A) Contact force B) Non-contact force
C) Muscular force D) Frictional force

Ans: B) Non-contact force

28. The force with which the Earth pulls an object towards itself is called

A) Mass B) Weight C) Density D) Volume

Ans: B) Weight

29. The SI unit of weight is

A) Kilogram B) Gram C) Newton D) Metre

Ans: C) Newton

30. Which instrument is used to measure weight?

A) Beam balance B) Spring balance
C) Measuring cylinder D) Thermometer

Ans: B) Spring balance

31. A spring balance measures

A) Temperature B) Weight/force
C) Volume D) Mass

Ans: B) Weight/force

32. The weight of an object on Earth is approximately

A) 0 N B) 1.6 times its mass
C) 10 times its mass
D) Equal numerically to its mass in every situation

Ans: C) 10 times its mass

33. An object of mass 1 kg has approximately what weight on the Moon according to the textbook table?

A) 1.6 N B) 3.8 N C) 9 N D) 10 N

Ans: A) 1.6 N

34. Which statement about mass is correct?

A) Mass changes from Earth to Moon
B) Mass remains the same at different places
C) Mass is measured in newtons D) Mass is a force

Ans: B) Mass remains the same at different places

35. Which statement about weight is correct?

A) It is always the same everywhere
B) It can vary from place to place
C) It is measured in kilograms D) It is not a force

Ans: B) It can vary from place to place

36. A body floats in water when

A) Its weight is greater than the buoyant force
B) Its weight is equal to the buoyant force
C) There is no gravitational force
D) There is no force acting on it

Ans: B) Its weight is equal to the buoyant force

37. The upward force exerted by a liquid on an immersed object is called

A) Frictional force B) Buoyant force
C) Magnetic force D) Muscular force

Ans: B) Buoyant force

38. If the weight of an object is greater than the buoyant force acting on it, the object will

A) Float B) Remain suspended forever
C) Sink D) Move upward

Ans: C) Sink

39. According to Archimedes' principle, the buoyant force on an immersed object is equal to

A) Weight of the object
B) Weight of the liquid displaced by the object
C) Mass of the object D) Volume of the object

Ans: B) Weight of the liquid displaced by the object

40. Pumice stone can float on water because

A) It has no mass B) It is less dense than water
C) Gravity does not act on it
D) It has magnetic properties

Ans: B) It is less dense than water

Assertion & Reason Questions

1. Assertion (A): Friction opposes the motion of an object.
Reason (R): Friction acts in a direction opposite to the direction of motion or attempted motion.

A) Both A and R are true, and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanation of A
C) A is true, R is false D) A is false, R is true

Ans: A

2. Assertion (A): Magnetic force is a non-contact force.
Reason (R): A magnet can exert force on another magnet or magnetic material even without touching it.

A) Both A and R are true, and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanation of A
C) A is true, R is false D) A is false, R is true

Ans: A

3. Assertion (A): An object can remain at rest even when forces act on it.
Reason (R): The forces acting on the object may balance each other.

A) Both A and R are true, and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanation of A
C) A is true, R is false D) A is false, R is true

Ans: A

4. Assertion (A): The weight of an object can be different on different planets.
Reason (R): Gravitational force can vary from one celestial body to another.
A) Both A and R are true, and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanation of A
C) A is true, R is false D) A is false, R is true
Ans: A

5. Assertion (A): An object sinks when its weight is greater than the buoyant force acting on it.
Reason (R): The buoyant force acts upward while gravitational force acts downward.
A) Both A and R are true, and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanation of A
C) A is true, R is false D) A is false, R is true
Ans: A

Matching

1. Match the force with the example.

Column–I	Column–II
1. Muscular force	a. Earth attracting an object
2. Magnetic force	b. Person lifting a bag
3. Gravitational force	c. Magnet attracting iron
4. Electrostatic force	d. Charged balloon attracting paper

A) 1-d, 2-a, 3-c, 4-b B) 1-c, 2-b, 3-d, 4-a C) 1-a, 2-d, 3-b, 4-c D) 1-b, 2-c, 3-a, 4-d
Ans: D

2. Match the force with its type.

Column–I	Column–II
1. Muscular force	a. Non-contact
2. Frictional force	b. Contact
3. Magnetic force	c. Contact
4. Gravitational force	d. Non-contact

A) 1-c, 2-d, 3-b, 4-a B) 1-a, 2-b, 3-c, 4-d C) 1-b, 2-c, 3-a, 4-d D) 1-d, 2-a, 3-c, 4-b
Ans: C

3. Match the quantity/instrument/unit.

Column–I	Column–II
1. Weight	a. Kilogram
2. Mass	b. Spring balance
3. SI unit of force	c. Newton
4. Instrument for measuring weight	d. Force due to gravity

A) 1-d, 2-a, 3-c, 4-b B) 1-a, 2-d, 3-b, 4-c C) 1-c, 2-b, 3-a, 4-d D) 1-b, 2-c, 3-d, 4-a
Ans: A

4. Match the situation with the effect of force.

Column–I	Column–II
1. Applying brakes to bicycle	a. Change in shape
2. Hitting a ball with a bat	b. Stopping/decreasing speed
3. Pressing an inflated balloon	c. Change in direction
4. Pushing a stationary box	d. Producing motion

A) 1-a, 2-d, 3-b, 4-c B) 1-c, 2-b, 3-d, 4-a C) 1-b, 2-c, 3-a, 4-d D) 1-d, 2-a, 3-c, 4-b
Ans: C

5. Match the condition with the result.

Column–I	Column–II
1. Weight = buoyant force	a. Object sinks
2. Weight > buoyant force	b. Object floats
3. Like magnetic poles	c. Repulsion
4. Unlike magnetic poles	d. Attraction

A) 1-d, 2-c, 3-b, 4-a B) 1-a, 2-b, 3-d, 4-c C) 1-c, 2-d, 3-a, 4-b D) 1-b, 2-a, 3-c, 4-d
Ans: D

Choose the Correct/Incorrect Sentence/Statement

1. Consider the following statements about force.

I. Force can change the speed of an object. II. Force can change the direction of an object.
III. Force can change the shape of an object. IV. Force can act only when two objects are touching.

A) I and II only B) I, II and III only C) II, III and IV only D) I, II, III and IV

Ans: B

2. Consider the following statements about friction.

I. Friction is a contact force. II. Friction always acts in the direction of motion.
III. Rougher surfaces generally produce greater friction. IV. Air can exert friction on a moving object.

A) I and III only B) II and IV only C) I, III and IV only D) I, II, III and IV

Ans: C

3. Consider the following statements about magnetic and electrostatic forces.

I. Magnetic force can act without physical contact. II. Like magnetic poles repel each other.
III. Unlike electric charges repel each other. IV. A charged object can attract small pieces of paper.

A) I and II only B) I, II and IV only C) II and III only D) I, II, III and IV

Ans: B

4. Consider the following statements about mass and weight

I. Mass is measured in kilograms. II. Weight is a force.
III. Weight is measured in newtons. IV. Mass changes from planet to planet, but weight never changes.

A) I and II only B) II and IV only C) I, II and III only D) I, II, III and IV

Ans: C

5. Consider the following statements about floating and sinking

I. A liquid exerts an upward buoyant force on an immersed object.
II. An object sinks when its weight is greater than the buoyant force acting on it.
III. An object floats when the buoyant force balances its weight. IV. Buoyant force acts downwards.

A) I and II only B) I, II and III only C) II, III and IV only D) I, II, III and IV

Ans: B

Chapter: Pressure and its Effects

8th CLASS

1. Pressure is defined as
A) Force × Area B) Force / Area
C) Area / Force D) Force + Area
Ans: B

2. The SI unit of pressure is
A) Newton B) Joule C) Pascal D) Watt
Ans: C) Pascal

3. One pascal is equal to
A) 1 N/m² B) 1 N × m² C) 1 kg/m² D) 1 N/m
Ans: A) 1 N/m²

4. If the same force acts on a smaller area, pressure
A) Decreases B) Increases
C) Remains zero D) Remains unchanged
Ans: B

5. If the same force acts on a larger area, pressure
A) Increases B) Decreases
C) Becomes infinite D) Becomes zero
Ans: B

6. Why are school-bag straps made broad?
A) To increase pressure on the shoulders
B) To reduce pressure on the shoulders
C) To increase the weight of the bag
D) To increase the force of gravity
Ans: B

7. A sharp knife cuts more easily than a blunt knife because
A) It exerts less force
B) Its sharp edge has smaller area and produces greater pressure
C) Its mass is always greater D) It has no friction
Ans: B

8. A pointed nail enters wood more easily than a blunt nail because the pointed end
A) Has greater area
B) Produces greater pressure for the same force
C) Has no force acting on it D) Has less weight
Ans: B

9. Pressure depends on
A) Force and area B) Colour and shape only
C) Mass and temperature only
D) Volume and density only
Ans: A

10. A force of 100 N acts on an area of 2 m². The pressure is
A) 20 Pa B) 50 Pa C) 100 Pa D) 200 Pa
Ans: B

11. Liquids exert pressure
A) Only downward B) Only upward
C) On the bottom and sides of the container
D) Only on the surface
Ans: C

12. The pressure exerted by a liquid generally increases with
A) Decrease in depth B) Increase in depth
C) Decrease in volume only
D) Increase in temperature only
Ans: B

13. In a bottle having holes at different heights, water comes out with greatest force from the
A) Highest hole B) Middle hole
C) Lowest hole D) All holes equally
Ans: C

14. The pressure exerted by a liquid at a greater depth is
A) Smaller B) Greater
C) Zero D) Independent of depth
Ans: B

15. Why is the base of a dam made broader than its top?
A) Water pressure is greater at greater depths
B) Water pressure is zero at the bottom
C) The top experiences maximum pressure
D) To reduce the mass of the dam
Ans: A

16. An overhead water tank is placed at a height mainly to
A) Decrease water pressure
B) Produce pressure due to the height of the water column
C) Remove gravity D) Stop water flow
Ans: B

17. Liquids exert pressure
A) Only at the bottom B) Only at the sides
C) In all directions D) Only upward
Ans: C

18. The layer of air surrounding Earth is called
A) Hydrosphere B) Atmosphere
C) Lithosphere D) Biosphere
Ans: B

19. Atmospheric pressure is the pressure exerted by
A) Water only B) Soil
C) Air surrounding Earth D) Sunlight
Ans: C

20. The pressure exerted by air around us is called
A) Liquid pressure B) Atmospheric pressure
C) Hydrostatic pressure only D) Magnetic pressure
Ans: B

21. A suction cup sticks to a smooth surface mainly because
A) Air pressure outside is greater than pressure inside the cup
B) Gravity disappears C) There is no pressure outside
D) The cup becomes magnetic
Ans: A

22. Atmospheric pressure is approximately equal to
A) 10 Pa B) 100 Pa C) 1000 Pa D) 100 kPa
Ans: D

23. Air moves from
A) Low pressure to high pressure
B) High pressure to low pressure
C) Cold region only to hot region D) Sea only to land
Ans: B

24. Wind is caused mainly by

A) Differences in air pressure B) Absence of air
C) Earth's magnetic field D) Ocean salinity
Ans: A

25. When air is heated, it generally
A) Becomes denser and sinks
B) Becomes lighter and rises C) Stops moving
D) Turns directly into liquid
Ans: B

26. Cooler air generally moves toward
A) A high-pressure region B) A low-pressure region
C) The Sun D) A vacuum only
Ans: B

27. The greater the difference in air pressure, generally the
A) Lower the wind speed B) Higher the wind speed
C) Lower the air movement
D) Greater the temperature only
Ans: B

28. The principle stating that faster-moving air has lower pressure is
A) Archimedes' principle B) Bernoulli's principle
C) Pascal's law D) Newton's law
Ans: B

29. When air moves rapidly over a roof, the pressure above the roof
A) Increases B) Decreases
C) Becomes zero D) Remains necessarily unchanged
Ans: B

30. During very high-speed winds, a roof may be blown away because
A) Pressure above the roof decreases while pressure inside remains relatively higher
B) Gravity disappears
C) The roof becomes weightless
D) There is no air below the roof
Ans: A

31. A thunderstorm generally involves
A) Strong winds, rain and lightning B) Only snowfall
C) Only sunshine D) Only evaporation
Ans: A

32. During a thunderstorm, warm moist air
A) Sinks immediately
B) Rises and creates a low-pressure region
C) Becomes solid D) Stops moving
Ans: B

33. Lightning is caused by
A)Movement and accumulation of electric charges in clouds
B) Only rainfall C) Atmospheric pressure alone
D) Earth's rotation alone
Ans: A

34. Lightning can occur
A) Only inside clouds B) Only between clouds
C) Only between cloud and ground
D) Within a cloud, between clouds, or between cloud and ground
Ans: D

35. A safe position during lightning is
A) Standing under an isolated tree
B) Lying in an open field
C) Staying indoors away from windows
D) Standing on a rooftop
Ans: C

36. A lightning conductor is generally
A) A plastic rod
B) A metal rod connected to the ground
C) A wooden pole D) A glass tube
Ans: B

37. A cyclone is associated with
A) A region of very high pressure at its centre
B) A low-pressure region at its centre
C) No air movement D) Only cold air
Ans: B

38. The calm central region of a cyclone is called
A) Core B) Eye
C) Centre of gravity D) Vortex ring
Ans: B

39. Cyclones generally form over
A) Warm ocean waters B) Dry deserts only
C) Frozen mountains only D) Underground water
Ans: A

40. Which organisation provides weather monitoring and warnings?
A) ISRO B) India Meteorological Department (IMD)
C) RBI D) DRDO
Ans: B

Assertion & Reason Questions

1. Assertion (A): Broad bag straps are more comfortable than narrow straps.
Reason (R): For the same force, increasing the area decreases pressure.
A) Both A and R are true, and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanation of A
C) A is true, R is false D) A is false, R is true
Ans: A

2. Assertion (A): Water comes out with greater force from a lower hole in a bottle.
Reason (R): Pressure exerted by a liquid increases with depth.

A) Both A and R are true, and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanation of A
C) A is true, R is false D) A is false, R is true

Ans: A

3. Assertion (A): Wind moves from a high-pressure region towards a low-pressure region.
Reason (R): A difference in air pressure causes air to move from higher pressure to lower pressure.

A) Both A and R are true, and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanation of A
C) A is true, R is false D) A is false, R is true

Ans: A

4. Assertion (A): A roof may be blown away during very high-speed winds.
Reason (R): Faster-moving air over the roof produces lower pressure, creating a pressure difference.

A) Both A and R are true, and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanation of A
C) A is true, R is false D) A is false, R is true

Ans: A

5. Assertion (A): The centre of a cyclone is called the eye.
Reason (R): The centre of a cyclone is a region of lowest pressure where winds are calm.

A) Both A and R are true, and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanation of A
C) A is true, R is false D) A is false, R is true

Ans: A

Matching

1. Match the quantity/term with its description.

Column–I	Column–II
1. Pressure	a. Pressure exerted by surrounding air
2. Atmospheric pressure	b. Force per unit area
3. Pascal	c. SI unit of pressure
4. Wind	d. Moving air

A) 1-d, 2-c, 3-b, 4-a B) 1-a, 2-b, 3-d, 4-c C) 1-c, 2-d, 3-a, 4-b D) 1-b, 2-a, 3-c, 4-d

Ans: D

2. Match the situation with the correct explanation.

Column–I	Column–II
1. Broad bag straps	a. Greater pressure at greater depth
2. Sharp knife	b. Reduced pressure on shoulders
3. Dam has broad base	c. Greater pressure for smaller area
4. Water from lower hole	d. Greater liquid pressure at greater depth

A) 1-b, 2-c, 3-a, 4-d B) 1-c, 2-b, 3-d, 4-a C) 1-d, 2-a, 3-b, 4-c D) 1-a, 2-d, 3-c, 4-b

Ans: A

3. Match the phenomenon with the principle/concept.

Column–I	Column–II
1. Wind formation	a. Bernoulli's principle
2. Roof blown away by high-speed wind	b. Pressure difference
3. Suction cup	c. Atmospheric pressure
4. Cyclone	d. Low-pressure system

A) 1-c, 2-d, 3-a, 4-b B) 1-a, 2-b, 3-d, 4-c C) 1-b, 2-a, 3-c, 4-d D) 1-d, 2-c, 3-b, 4-a

Ans: C

4. Match the weather event with the relevant feature.

Column–I	Column–II
1. Thunderstorm	a. Eye
2. Lightning	b. Electrical discharge
3. Cyclone	c. Strong winds, rain and lightning
4. Lightning conductor	d. Safe path for electrical discharge to ground

A) 1-c, 2-b, 3-a, 4-d B) 1-b, 2-c, 3-d, 4-a C) 1-a, 2-d, 3-b, 4-c D) 1-d, 2-a, 3-c, 4-b

Ans: A

5. Match the condition with the result.

Column–I	Column–II
1. Smaller area for same force	a. Higher wind speed
2. Greater depth in liquid	b. Greater pressure
3. Greater pressure difference	c. Greater pressure
4. Faster moving air	d. Lower pressure

A) 1-b, 2-c, 3-d, 4-a B) 1-c, 2-b, 3-a, 4-d C) 1-d, 2-a, 3-b, 4-c D) 1-a, 2-d, 3-c, 4-b

Ans: B

Choose the Correct Sentence/Statement

1. Choose the CORRECT statement.

A) Pressure is force multiplied by area.
B) Pressure is force per unit area.
C) Pressure is independent of area.
D) Pressure is measured in kilograms.

Ans: B

2. Choose the INCORRECT statement.

A) Liquids exert pressure on the bottom of containers.
B) Liquids exert pressure on the sides of containers.
C) Liquid pressure increases with depth.
D) Liquid pressure is greatest at the surface and decreases with depth.

Ans: D

3. Choose the CORRECT statement.

A) Air moves from low pressure to high pressure.
B) Warm air generally rises because it becomes lighter.
C) Wind has no relation to pressure difference.
D) Greater pressure difference always produces slower winds.

Ans: B

4. Choose the INCORRECT statement.

A) Lightning is an electrical discharge.
B) Lightning may occur between clouds or between cloud and ground.
C) Standing under an isolated tree during lightning is recommended.
D) A lightning conductor provides a path for electrical discharge to the ground.

Ans: C

5. Choose the CORRECT statement.

A) The centre of a cyclone is a high-pressure region.
B) The eye of a cyclone is generally calm compared with the surrounding region.
C) Cyclones form only over deserts.
D) Cyclones have no relation to low pressure.

Ans: B

Chapter: Heat

7th CLASS

1. Which one of the following is a reliable measure?
(a) Hotness (b) Coldness
(c) Temperature (d) None of these
Ans: (c) Temperature

2. Name the device which is used to measure the hotness or coldness of an object.
(a) Picometer (b) Barometer
(c) Manometer (d) Thermometer
Ans: (d) Thermometer

3. Which one is filled in the bulb of a thermometer?
(a) Mercury (b) Lead (c) Copper (d) Silver
Ans: (a) Mercury

4. What is the normal temperature of a healthy person?
(a) 37°C (b) 37°F (c) 37 K (d) None of these
Ans: (a) 37°C

5. Heat always flows
(a) from a colder object to a hotter object
(b) from a hotter object to a colder object
(c) in both the directions
(d) heat never flows from one object to other
Ans: (b) from a hotter object to a colder object

6. Conduction is the method of transfer of heat in
(a) liquids (b) solids (c) gases (d) vacuum
Ans: (b) solids

7. Heat from the sun reaches to us by
(a) radiation (b) conduction
(c) convection (d) all of these
Ans: (a) radiation

8. A beggar wrapped himself with a few layers of newspaper on a cold winter night. This helped him to keep himself warm because:
(a) friction between the layers of newspaper produces heat.
(b) air trapped between the layers of newspaper is a bad conductor of heat.
(c) newspaper is a conductor of heat.
(d) newspaper is at a higher temperature than the temperature of the surrounding.
Ans: (b) air trapped between the layers of newspaper is a bad conductor of heat.

9. A marble tile would feel cold as compared to a wooden tile on a winter morning, because the marble tile:
(a) is a better conductor of heat than the wooden tile.
(b) is polished while wooden tile is not polished.
(c) reflects more heat than wooden tile.
(d) is a poor conductor of heat than the wooden tile.
Ans: (a) is a better conductor of heat than the wooden tile.

10. Which of the following is a insulator
(a) Graphite (b) Air
(c) Aluminium rod (d) Copper rod
Ans: (b) Air

11. Stainless steel pans are usually provided with copper bottom. The reason for this could be that:
(a) copper bottom makes the pan more durable
(b) such pans appear colourful
(c) copper is easier to clean than stainless steel
(d) copper is a better conductor of heat than the stainless steel
Ans: (d) copper is a better conductor of heat than the stainless steel

12. The correct method of reading a clinical thermometer is:
(a) holding the thermometer by bulb
(b) before use the mercury level should be below 39°C
(c) don't hold the thermometer by bulb
(d) none of these
Ans: (c) don't hold the thermometer by bulb

13. The substances which conduct heat easily are called:
(a) convection (b) radiation
(c) conductors (d) none of these
Ans: (c) conductors

14. The phenomenon involved in the formation of land and sea breeze is:
(a) conduction (b) convection
(c) radiation (d) all of these
Ans: (b) convection

15. Which thermometer is used to measure temperature of different things and places?
(a) Laboratory thermometer (b) Clinical thermometer
(c) Minimum and maximum thermometer
(d) None of these
Ans: (a) Laboratory thermometer

16. Which of the following substance is not a bad conductor of heat?
(a) Rubber (b) Aluminium (c) Glass (d) Plastic
Ans: (b) Aluminium

17. Land breeze blows from
(a) lower surface to upper surface (b) sea to land
(c) upper surface to lower surface (d) land to sea
Ans: (d) land to sea

18. Which type of cloth is preferred in summer?
(a) Silk clothes (b) Cotton clothes
(c) Nylon clothes (d) Polyester clothes
Ans: (b) Cotton clothes

19. Which colour absorbs more heat?
(a) Black (b) White (c) Blue (d) Red
Ans: (a) Black

20. Light coloured clothes are preferred during:
(a) winter (b) summer (c) rain (d) none of these
Ans: (b) summer

21. Which thermometer records the highest and lowest temperature during a period of time?
(a) Clinical thermometer (b) Laboratory thermometer
(c) Minimum and maximum thermometer
(d) None of these
Ans: (c) Minimum and maximum thermometer

22. Heat is a form
(a) Power (b) Work (c) Temperature (d) Energy
Ans: (d) Energy

23. 10°C is equal to
(a) 173 K (b) 273 K (c) 283 K (d) 183 K
Ans: (c) 283 K

24. Thermos flask keeps hot liquid hot and cold liquid cold by
(a) Cooling (b) Using coolant
(c) Preventing heat loss (d) Heating
Ans: (c) Preventing heat loss

25. Process of change of state from gaseous state to liquid state is called
(a) freezing (b) sublimation
(c) boiling (d) condensation
Ans: (d) condensation

26. Amani and Roja measured their body temperatures. Amani found her to be 98.6 degree Fahrenheit and Roja recorded 37° Celsius. Which of the following statement is true?
(a) Amani has a higher body temperature than Roja
(b) Amani has a lower body temperature than Roja.
(c) Both have normal body temperature
(d) Both are suffering from fever
Ans: (c) Both have normal body temperature

27. Raju wonders why the level of mercury should change at all when the bulb of the thermometer is brought in contact with another object.
(a) Because mercury is a liquid material
(b) Because bulb have no kink
(c) Temperature of object may not same as mercury
(d) Every object has different temperature
Ans: (c) Temperature of object may not same as mercury

28. Vamsi wants to know that when a cold steel spoon is dipped in a cup of hot milk. It transfer heat to its other end by the process of
(a) Conduction (b) Convection
(c) Radiation (d) Semi convection
Ans: (a) Conduction

29. Which of the following is a poor conductor of heat?
(a) Silver (b) Aluminum (c) Brass (d) Tungsten
Ans: (d) Tungsten

30. Convection may occur through
(a) Solids, liquids (b) Liquids, gases
(c) Solids, gases (d) Solids, liquids, gases
Ans: (b) Liquids, gases

31. Which of the following statement is or are incorrect?
(a)Radiation is transferred in the form of electromagnet
(b) Conduction waves is transferred with the help of particles of materials
(c) A land which is surrounded by water heated by convection
(d) None of the above
Ans: (c) A land which is surrounded by water heated by convection

32. Which type of heat transfer is actually minimized when using a thermo flask?
(a) Conduction (b) Convection
(c) Radiation (d) All the above.
Ans: (c) Radiation

33. Srinu wants to know that why it is advised to use digital thermometer?
(a) It is cheap and available everywhere.
(b) As a digital it does not require any contact to measuring temperature.
(c) It does not use of mercury.
(d) Every point can be seen by a "beep sound".
Ans: (c) It does not use of mercury.

34. Ramu wants to know that is it possible to construct building which are not affected by heat?
(a) Building made by soil
(b) Wooden bricks are used in the building
(c) Hollow bricks are used for making building
(d) White colored cement bricks are used in building
Ans: (c) Hollow bricks are used for making building

35. One litre of water at 30 degree Celsius is mixed with one litre of water at 50 degree Celsius. The temperature of the mixture will be
(a) 80^0 Celsius (b) 20^0 Celsius
(b) More than 50^0 Celsius but less than 80^0 Celsius
(d) Between 30^0 Celsius and 50^0 Celsius
Ans: (d) Between 30^0 Celsius and 50^0 Celsius

36. Why should we avoid keeping the thermometer in the sun or near a flame?
(a) It measures flame temperature
(b) Sun temperature can be measured
(c) Automatically it may break
(d) Vapour can create under thermometer
Ans: (c) Automatically it may break

37. Stainless steel pans are usually provided with copper bottoms. The reason for this could be
(a) Copper bottom makes the pan more durable
(b) Such pans appear colorful
(c) Copper is a better conductor of heat than the stainless steel
(d) Copper is easier to clean than the stainless steel
Ans: (c) Copper is a better conductor of heat than the stainless steel

38. A clinical thermometer reads temperature from
(a) 35°C to 42°C (b) 36°C to 43°C
(c) 30°C to 40°C (d) 31°C to 38°C
Ans: (a) 35°C to 42°C

39. The range of Laboratory thermometers is usually From
(a) –20°C to 100°C (b) –10°C to 110°C
(c) –10°C to 120°C (d) –20°C to 130°C
Ans: (b) –10°C to 110°C

40. Mohan has three thermometers. He wants to measure the temperature of his body and that of boiling water. Which thermometer(s) should he choose?
(a) Clinical thermometer for measuring body temperature and laboratory thermometer for measuring the temperature of boiling water
(b) Clinical thermometer for measuring temperature of both
(c) Laboratory thermometer for measuring temperature of both.
(d) Digital thermometer for measuring temperature of both
Ans: (a)

Assertion & Reason Questions

1. Assertion (A): Temperature measures how hot or cold an object is.
Reason (R): Temperature depends on the quantity of heat present in the object.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: b) Both A and R are true, but R is not the correct explanation of A

2. Assertion (A): A metal spoon becomes hot when its one end is kept in hot tea.
Reason (R): Metals are good conductors of heat.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

3. Assertion (A): Water in a beaker gets heated faster at the top when heated from below.
Reason (R): Warm water becomes lighter and rises, while cold water sinks, setting up convection currents.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

4. Assertion (A): We wear light-coloured cotton clothes in summer.
Reason (R): Light colours absorb more heat and keep us cool.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: c) A is true, R is false

5. Assertion (A): A black surface absorbs more heat radiation than a white surface.
Reason (R): Black surfaces are better absorbers and emitters of heat than light-coloured surfaces.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

MATCHING

1. Heat Transfer & Methods

Mode of Heat Transfer	Example
(i) Conduction	Metal spoon getting hot in a pan
(ii) Convection	Warm air rising near a heater
(iii) Radiation	Feeling warmth of the Sun
(iv) Filtration	Cooling of tea

Choose the correct option
a) (i), (ii), (iii) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (iv) only
Ans: a) (i), (ii), (iii) only

2. Laboratory Thermometer & Its Features

Feature	Correct Description
(i) Temperature range	–10 °C to 110 °C
(ii) Bulb	Contains mercury/alcohol
(iii) Never tilt thermometer	To avoid mercury breakage
(iv) Readings taken holding the bulb	

Choose the correct option
a) (i), (ii), (iii) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (iii), (iv) only
Ans: a) (i), (ii), (iii) only

3. Conductors & Insulators

Material	Type
(i) Copper	Good conductor
(ii) Aluminium	Good conductor
(iii) Wood	Insulator
(iv) Iron rod	Insulator

Choose the correct option

a) (i), (ii), (iii) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (ii), (iii) only

Ans: d) (i), (ii), (iii) only

4. Effects of Heat

Effect	Example
(i) Expansion	Railway tracks gaps
(ii) Change of state	Ice melting to water
(iii) Increase in temperature	Heating water
(iv) Change in colour	Chalk turning pink when heated

Choose the correct option

a) (i), (ii), (iii) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (iii), (iv) only

Ans: a) (i), (ii), (iii) only

5. Clinical vs Laboratory Thermometers

Thermometer	Property
(i) Clinical thermometer	Range: 35 °C to 42 °C
(ii) Laboratory thermometer	Range: –10 °C to 110 °C
(iii) Clinical thermometer	Has kink to prevent mercury fall
(iv) Laboratory thermometer	Has kink

Choose the correct option

a) (i), (ii), (iii) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (iii) only

Ans: a) (i), (ii), (iii) only

Choose the Correct or incorrect Sentence/Statement

1. Which of the following are correct?

a) Sound is produced by vibrating objects b) Sound needs a medium to travel

c) Sound can travel through vacuum d) Sound travels fastest in solids

A) a, b and d B) b and c C) a and c D) c and d

Ans: A) a, b and d

2. Which of the following are correct?

a) High-pitched sounds have a higher frequency b) Low-pitched sounds have a lower frequency

c) Loudness depends on the amplitude of vibration d) Frequency affects loudness

A) a, b and c B) a and d C) b and d D) c and d

Ans: A) a, b and c

3. Which of the following are correct?

a) Echo is reflected sound b) Echo is heard immediately after the sound is produced

c) Sound cannot reflect from surfaces d) Echo is used in SONAR

A) a, b and d B) a and c C) b and c D) c and d

Ans: A) a, b and d

4. Which of the following are correct?

a) Ultrasound has frequency above 20 kHz b) Infrasound has frequency below 20 Hz

c) Ultrasound cannot be used for medical imaging d) Bats use ultrasound to locate prey

A) a, b and d B) a and c C) b and c D) c and d

Ans: A) a, b and d

5. Which of the following are correct?

a) Sound travels fastest in air b) Sound travels faster in water than in air

c) Sound travels slowest in solids d) Sound energy can be converted to electrical signals in microphones

A) a, b and d B) a and c C) b and d D) c and d

Ans: C) b and d

Chapter – 9: Motion and Time

7th CLASS

1. A bus travels 54 km in 90 minutes. The speed of the bus is
(a) 0.6 m/s (b) 10 m/s (c) 5.4 m/s (d) 3.6 m/s
Ans: (b) 10 m/s

2. Nearly all the clocks make use of
(a) straight line motion (b) periodic motion
(c) random motion (d) circular periodic motion
Ans: (d) circular periodic motion

3. A simple pendulum takes 32s to complete 20 oscillations, what is the time period of the pendulum?
(a) 1.6 s (b) 2.6 s (c) 3.6 s (d) 4.8 s
Ans: (a) 1.6 s

4. Time period of a simple pendulum depends upon its
(a) weight of bob (b) length
(c) both (a) and (b) (d) None of these
Ans: (b) length

5. Which of the following cannot be used for measurement of time?
(a) A leaking tap (b) Simple pendulum
(c) Shadow of an object during the day
(d) Blinking of eyes
Ans: (d) Blinking of eyes

6. On which axis is dependent variable represented?
(a) x-axis (b) y-axis
(c) On any axis (d) Depends on the data
Ans: (b) y-axis

7. Raju walks to his school which is at a distance of 3 km from his home in 30 minutes. On reaching he finds that the school is closed and comes back by a bicycle with his friend and reaches home in 20 minutes. His average speed in km/h is
(a) 8.3 (b) 7.2 (c) 5 (d) 3.6
Ans: (b) 7.2

8. The most well known periodic motion is that of
(a) sundial (b) stop watch
(c) simple pendulum (d) sand clock
Ans: (c) simple pendulum

9. A particle vibrates 10 times in 1 sec. What is the time period of vibration of the particle?
(a) 10 sec (b) 1 sec (c) 0.1 sec (d) 0.01 sec
Ans: (c) 0.1 sec

10. The rate of change of displacement is called
(a) velocity (b) Acceleration (c) Rest (d) Motion
Ans: (a) velocity

11. The speed of the vehicle is recorded by
(a) Ammeter (b) Odometer
(c) Speedometer (d) Voltmeter
Ans: (c) Speedometer

12. The clock used now a days are:
(a) quartz (b) minute (c) second (d) all of these
Ans: (a) quartz

13. Physical quantity which we can't obtain from a distance- time graph is
(a) speed (b) time taken
(c) change in position (d) Velocity
Ans: (d) Velocity

14. A horse pulling a cart has:
(a) oscillatory motion (b) circular motion
(c) linear motion (d) none of these
Ans: (a) oscillatory motion

15. If the velocity of a body does not change with time, its acceleration is
(a) zero (b) infinite (c) unity (d) None of these
Ans: (a) zero

16. The distance travelled by the vehicles is recorded by
(a) monometer (b) odometer
(c) speedometer (d) motometer
Ans: (b) odometer

17. The times taken by a pendulum to complete one oscillation is:
(a) oscillation period (b) 1 second
(c) time period (d) frequency
Ans: (c) time period

18. Watch used to measure short interval of time is
(a) Stop watch (b) Pendulum watch
(c) Atom watch (d) Quartz watch
Ans: a) Stop watch

19. If the speed of an object along a straight line keeps changing, its motion is said to be
(a) uniform motion (b) non-uniform motion
(c) linear motion (d) none of these
Ans: (b) non-uniform motion

20. The time taken by a pendulum of given length to complete one oscillation is
(a) Different at different times (b) Same at all times
(c) Increases at different times
(d) Decreases at different times
Ans: b) Same at all times

21. The to and fro motion of the particle about its mean position is called:
(a) intervals (b) vibration (c) pendulum (d) can't say
Ans: (b) vibration

22. The distance-time graph of an object under uniform motion is a
(a) curved line (b) straight line (c) circle (d) parabola
Ans: (b) straight line

23. The correct symbol to represent the speed of an object is:
(a) 5 m/s (b) 5 mp (c) 5 m/s-1 (d) 5 s/m
Ans: (a) 5 m/s

24. The basic unit of speed is
(a) Km/min (b) m/min (c) km/h (d) m/s
Ans: (d) m/s

25. An ancient Time measuring device SUNDIAL at Jantar Mantar is in
(a) Ahmedabad (b) Bombay (c) Jaipur (d) Lucknow
Ans: (c) Jaipur

Assertion & Reason Questions

1. Assertion (A): A body is said to be in uniform motion if it covers equal distances in equal intervals of time.
Reason (R): In uniform motion, the speed of the body remains constant.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

2. Assertion (A): The formula for speed is distance divided by time.
Reason (R): Speed measures how fast an object is moving.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

3. Assertion (A): A distance–time graph for an object at rest is a straight horizontal line.
Reason (R): The distance covered by an object at rest changes with time.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: c) A is true, R is false

4. Assertion (A): The odometer of a vehicle measures the distance travelled.
Reason (R): The speedometer of a vehicle records the distance travelled per hour.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: c) A is true, R is false

5. Assertion (A): The time taken by a pendulum for one complete oscillation is called its time period.
Reason (R): The time period of a pendulum depends on its length.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

MATCHING

1. Types of Motion & Examples

Type of Motion	Example
(i) Rectilinear	Car moving on a straight road
(ii) Circular	Hands of a clock
(iii) Periodic	Swing of a pendulum
(iv) Rotatory	Apple falling from tree

Choose the correct option
a) (i), (ii), (iii) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (ii), (iii) only
Ans: d) (i), (ii), (iii) only

2. Units & Instruments of Measurement

Quantity	Standard Unit / Instrument
(i) Distance	Metre
(ii) Time	Second
(iii) Speed	Metre/second
(iv) Speed	Stop watch

Choose the correct option
a) (i), (ii), (iii) only b) (i), (ii), (iv) only c) All (i–iv) d) (i), (iii), (iv) only
Ans: a) (i), (ii), (iii) only

3. Speed, Distance, Time Relations

Formula	Meaning
(i) Speed = Distance ÷ Time	How fast an object moves
(ii) Distance = Speed × Time	Path covered
(iii) Time = Speed ÷ Distance	
(iv) Average speed = Total distance ÷ Total time	The overall rate of motion, over a specific time interval

Choose the correct option

a) (i), (ii), (iv) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (iii), (iv) only

Ans: a) (i), (ii), (iv) only

4. Time Measuring Devices

Device	Use
(i) Pendulum clock	Periodic motion for timekeeping
(ii) Digital clock	Displays hours, minutes, seconds
(iii) Stop watch	Measures short intervals
(iv) Scale	Measures speed

Choose the correct option

a) (i), (ii), (iii) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (iii), (iv) only

Ans: a) (i), (ii), (iii) only

5. Distance–Time Graph Interpretations

Graph Feature	Meaning
(i) Straight line with positive slope	Uniform motion
(ii) Curved line	Non-uniform motion
(iii) Horizontal line	Body at rest
(iv) Line falling downwards	Increasing speed

Choose the correct option

a) (i), (ii), (iii) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (iii), (iv) only

Ans: a) (i), (ii), (iii) only

Choose the Correct or incorrect Sentence/Statement

1. Which of the following are correct?

a) The distance covered by an object in unit time is called speed.
b) A speedometer measures the instantaneous speed of a vehicle.
c) A distance–time graph of a body moving with uniform speed is a straight line.
d) Speed and velocity are exactly the same physical quantity.

A) a, b and c B) a, c and d C) b and d D) c and d

Ans: A) a, b and c

2. Which of the following are correct?

a) Uniform motion means covering equal distances in equal intervals of time.
b) A pendulum moving to and fro is an example of oscillatory motion.
c) The basic unit of speed in the SI system is m/s. d) Oscillatory motion is always non-repetitive.

A) b and c B) b, c and d C) a, b and c D) a, c and d

Ans: C) a, b and c

3. Which of the following are correct?

a) The time taken for one complete oscillation of a pendulum is called its time period. b) The SI unit of time is second.
c) A simple pendulum of fixed length has the same time period at any place on Earth.
d) The length of a pendulum affects its time period.

A) a, b and c B) a, b and d C) b, c and d D) a, c and d

Ans: B) a, b and d

4. Which of the following are correct?

a) Speed = Distance ÷ Time. b) Average speed is the ratio of total distance to total time.
c) The slope of a distance–time graph gives speed. d) If speed is constant, the distance–time graph is a curve.

A) a, b and c B) b and d C) a and d D) c and d

Ans: A) a, b and c

5. Which of the following are correct?

a) Non-uniform motion means unequal distances covered in equal intervals of time.
b) A clock is a device used to measure time accurately.
c) The pendulum of a wall clock has a very short time period compared to a second's pendulum.
d) Uniform motion cannot be represented by a straight line on a distance–time graph.

A) a, b and c B) a, c and d C) b and d D) a, b and d

Ans: A) a, b and c

Chapter – 10: Electric Current and its Effects 7th CLASS

1. In making a battery
(a) positive terminal of one cell is connected to the negative terminal of the next cell
(b) positive terminal of one cell is connected to the positive terminal of the next cell
(c) negative terminal of one cell is connected to the negative terminal of the next cell
(d) none of the above
Ans: (a) positive terminal of one cell is connected to the negative terminal of the next cell

2. Where can the key or switch be placed in the circuit?
(a) Left side of the battery (b) Right side of the battery
(c) Can be placed anywhere in the circuit
(d) Near the positive terminal of the bulb
Ans: (c) Can be placed anywhere in the circuit

3.The coil of wire contained in an electric heater is known as
(a) component (b) element (c) circuit (d) spring
Ans: (b) element

4. Which mark is necessary on electric appliances?
(a) AGMARK (b) ISI (c) FICCI (d) KSK
Ans: (b) ISI

5. When a switch is in OFF position.
(i) circuit starting from the positive terminal of the cell stops at the switch.
(ii) circuit is open. (iii) no current flows through it.
(iv) current flows after some time.
Choose the combination of correct answer from the following
(a) all are correct (b) (ii) and (iii) are correct
(c) only (iv) is correct (d) only (i) and (ii) are correct
Ans: (b) (ii) and (iii) are correct

6. Which of the following precautions need not be taken while using electric gadgets / appliances/circuit?
(a) We should never touch a lighted electric bulb connected to the mains.
(b) We should never experiment with the electric supply from the mains or a generator or an inverter.
(c) We should never use just any wire or strip of metal in place of a fuse.
(d) We should never turn the switch in ON position
Ans: (d) We should never turn the switch in ON position

7. The soft-iron core of an electromagnet loses its magnetism once the current passing through the electromagnetic coil stops because.
(a) Domains lose their alignment when the current is stopped
(b) Iron cannot hold alignment for longer time even when the current is passing through the coil
(c) Magnetic properties of iron are weak
(d) Domains inside the iron get aligned in north to south direction
Ans: (a) Domains lose their alignment when the current is stopped

8. A __ is used in torches.
(a) Generator (b) Fuse (c) Secondary cell (d) Dry cell
Ans: (d) Dry cell

9. An element measure the flowing an electric current is:
(a) voltmeter (b) filament (c) circuit (d) ammeter
Ans: (d) ammeter

10. Electromagnet is used in
(a) Battery (b) Dry cell (c) Electric bell (d) Fuse
Ans: (c) Electric bell

11. The bulb glows only when .....flows through it.
(a) Current (b) Light (c) Air (d) Water
Ans: (a) Current

12. An element measure the potential difference between two points in an electric circuit is:
(a) voltmeter (b) filament (c) circuit (d) ammeter
Ans: (a) voltmeter

13. A device which prevents or allows the current to flow through it
(a) Motor (b) Terminal (c) Conductor (d) Switch
Ans: (d) Switch

14. Electric current has energy called:
(a) voltmeter (b) filament
(c) electrical energy (d) none of these
Ans: (c) electrical energy

15. The metal which is poor conductor of electricity is
(a) Gold (b) Iron (c) Aluminium (d) tungsten
Ans: (d) tungsten

16. The amount of heat produced in a wire depends on its material
(a) Length (b) Thickness
(c) Length and thickness (d) None of these
Ans: (c) Length and thickness

17. If a piece of soft iron is placed inside the coil n number of turns and current is passed in the coil from a battery, what name is then given to the device so obtained?
(a) spectrometer (b) gravitometer
(c) barometer (d) electromagnet
Ans: (d) electromagnet

18. If the coil in a simple generator is wound around a soft iron core then:
(a) strength of magnetic field increases.
(b) current produced will be increased.
(c) voltage produced will be increased (d) all
Ans: (d) all

19. In a bulb there is a thin wire called
(a) filament (b) coil (c) element (d) fuse wire
Ans: (a) filament

20. A glowing bulb becomes warm due to the
(a) heating effect of current
(b) magnetic effect of current
(c) chemical effect of current
(d) physical effect of current
Ans: (a) heating effect of current

21. Which of the following is being used in place of fuses?
(a) MCB (b) Nichrome (c) Filament (d) Switch
Ans: (a) MCB

22. When electric current passes through a wire, it behave like a
(a) battery (b) magnet (c) fuse (d) compass needle
Ans: (b) magnet

23. Fuse wire is generally made of
(a) tin and lead (b) nickel and chromium
(c) nickel and copper (d) chromium and silver
Ans: (a) tin and lead

24. Coils of heating devices are made up of
(a) Mercury (b) Nichrome (c) Copper (d) Tungsten
Ans: (b) Nichrome

25. When electric current flows through a conductor, some amount of:
(a) electrical energy is converted into heat energy
(b) electrical energy is converted into mechanical energy
(c) mechanical energy is converted into electrical energy
(d) heat energy is converted into electrical energy
Ans: (a) electrical energy is converted into heat energy

26. An electric fuse works on the:
(a) Chemical effect of current (b) Magnetic effect of current
(c) Lighting effect of current (d) Heating effect of current
Ans: (d) Heating effect of current

27. Circuit Breaker Device which can be used in place of fuse in domestic electric wiring is called:
(a) CBD (b) DCB (c) MCD (d) MCB
Ans: Option D

28. Which of the following characteristic is not suitable for a fuse wire?
(a) Thin and short (b)Thick and short
(c) Low melting point
(d) Higher resistance than rest of wiring
Ans: (b)Thick and short

29. An MCB which cuts off the electricity supply in domestic circuit in case of short circuiting and overloading works on the:
(a) Chemical effect of current (b) Heating effect of current
(c) Magnetic effect of current (d) Lighting effect of current
Ans: (c) Magnetic effect of current

30. Which of the following does not work on the heating effect of current?
(a) Electric bulb (b) Miniature circuit breaker
(c) Electric fuse (d) Immersion rod
Ans: (b) Miniature circuit breaker

31. The compact fluorescent electric lamp has:
(a) Nichrome filament (b) Chromium filament
(c) Tungsten filament (d) No filament
Ans: (d) No filament

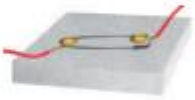
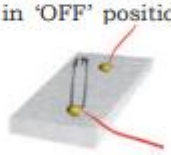
32. choose the incorrect statement:
(a) MCB stand for miniature circuit breaker.
(b) MCB works on the magnetic effect of current.
(c)MCB does not work on the heating effect of current.
(d)None of the above
Ans: (d)None of the above

33. Choose the statement which is/ are incorrect?
(a) A fuse works on the heating effect of current.
(b) A fuse consists of a short length of a thin, tin-plated copper wire having low melting point.
(c) A fuse is a safety device which prevents electric fires and damage to electrical appliances due to excessive flow of current.
(d) None of the above
Ans: (d) None of the above

34. The element of an electric iron is made of:
(a) Iron (b) Nickel (c) Nichrome (d) Tungsten
Ans: (c) Nichrome

35. The magnetic effect of electric current was discovered by:
(a) Maxwell (b) Darwin (c) Oersted (d) Newton
Ans: (c) Oersted

Practice Symbols

S.No.	Electric component	Symbol
1.	Electric cell 	
2.	Electric bulb 	
3.	Switch in 'ON' position 	
4.	Switch in 'OFF' position 	
5.	Battery 	
6.	Wire 	

Assertion & Reason Questions

1. Assertion (A): When electric current flows through a resistance wire, it becomes hot.
Reason (R): Electric current produces heat because electrical energy is converted into heat energy.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

2. Assertion (A): A soft iron nail becomes a magnet when current flows through a coil wound around it.
Reason (R): Current-carrying conductors produce a magnetic field around them.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

3. Assertion (A): A fuse is connected in series with the electrical circuit.
Reason (R): The fuse wire melts and breaks the circuit when the current exceeds the safe limit.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

4. Assertion (A): A compass needle placed near a current-carrying conductor gets deflected.
Reason (R): Electric current through a conductor produces a magnetic field around it.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

5. Assertion (A): Electric irons and heaters work on the heating effect of current.
Reason (R): High resistance wires in these appliances convert electrical energy into heat energy.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

Matching

1. Heating Effect of Electric Current

Statement	Example
(i) Heating effect is used in electric iron	✔
(ii) Heating effect is used in electric bulb filament	✔
(iii) Heating effect is used in electric bell	✗
(iv) Heating effect is used in geyser	✔

Choose the correct option
a) (i), (ii), (iv) only b) (i), (iii), (iv) only c) All (i–iv) d) (ii), (iii) only
Ans: a) (i), (ii), (iv) only

2. Symbols of Electrical Components

Symbol	Component
(i) —o/ o—	Switch (open)
(ii) —●/●—	Switch (closed)
(iii) ⊖ ⊕	Cell
(iv) Zig-zag line	Resistor/heating element

Choose the correct option
a) (i), (ii), (iii) only b) (i), (ii), (iv) only c) All (i–iv) d) (ii), (iii), (iv) only
Ans: c) All (i–iv)

3. Magnetic Effect of Electric Current

Device	Principle
(i) Electric bell	Magnetic effect
(ii) Electromagnet	Magnetic effect

(iii) Immersion rod heater	Heating effect
(iv) Fuse	Heating effect (melting wire)

Choose the correct option

a) (i), (ii) only b) (ii), (iii), (iv) only c) (i), (ii), (iv) only d) (i), (ii), (iii) only

Ans: a) (i), (ii) only

4. Conductors and Insulators

Material	Category
(i) Copper	Conductor
(ii) Plastic	Insulator
(iii) Aluminium	Conductor
(iv) Rubber	Conductor

Choose the correct option

a) (i), (ii), (iii) only b) (i), (iii), (iv) only c) (i), (ii), (iv) only d) All (i–iv)

Ans: a) (i), (ii), (iii) only

5. Uses of Electromagnets

Use	Device
(i) Lifting scrap iron	Electromagnet
(ii) Loudspeaker	Electromagnet
(iii) Torch bulb filament	Electromagnet
(iv) Electric bell	Electromagnet

Choose the correct option

a) (i), (ii), (iv) only b) (i), (iii), (iv) only c) All (i–iv) d) (ii), (iii) only

Ans: a) (i), (ii), (iv) only

Choose the Correct or incorrect Sentence/Statement

1. Which of the following are correct?

a) A current-carrying wire behaves like a magnet.
b) The magnetic effect of current is called the heating effect.
c) A compass needle gets deflected when placed near a current-carrying conductor.
d) The strength of the magnetic field depends on the amount of current.

A) a, c and d B) b and d C) a, b and c D) b and c

Ans: A) a, c and d

2. Which of the following are correct?

a) An electric bulb glows because of the heating effect of current.
b) The filament of a bulb is usually made of tungsten.
c) Electric current produces both heating and magnetic effects.
d) The heating effect of current is used in electric heaters.

A) a, b and c B) a, b and d C) a, c and d D) a, b, c and d

Ans: D) a, b, c and d

3. Which of the following are correct?

a) A fuse is a safety device that melts and breaks the circuit when excess current flows.
b) A fuse wire is made of an alloy with a low melting point.
c) A fuse should be connected in parallel with the device.
d) The rating of a fuse depends on the maximum safe current.

A) a, b and d B) a, b and c C) b, c and d D) a, c and d

Ans: A) a, b and d

4. Which of the following are correct?

a) Electromagnets are made by winding an insulated copper wire on a soft iron core.
b) Electromagnets are stronger when more turns of wire are used.
c) Electromagnets lose their magnetism when the current is switched off.
d) Electromagnets are permanent magnets.

A) a, b and c B) a, c and d C) b, c and d D) a and d

Ans: A) a, b and c

Chapter – 9: Light

7th CLASS

1. The path of the light is
(a) always a straight line (b) a curved line
(c) a zig-zag line (d) depends on the medium
Ans: (a) always a straight line

2. Which one shows lateral inversion?
(a) Plane mirror (b) Convex mirror
(c) Concave mirror (d) All of these
Ans: (a) Plane mirror

3. Image formed by a plane mirror is
(a) virtual and erect (b) real and erect
(c) virtual and inverted (d) real and inverted
Ans: (a) virtual and erect

4. Boojho and Paheli were given one mirror each by their teacher. Boojho found his image to be erect and of the same size whereas Paheli found her image erect and smaller in size. This means that the mirrors of Boojho and Paheli are, respectively
(a) plane mirror and concave mirror
(b) concave mirror and convex mirror
(c) plane mirror and convex mirror
(d) convex mirror and plane mirror
Ans: (c) plane mirror and convex mirror

5. Which of the following can be used to form a real image?
(a) Concave mirror only (b) Plane mirror only
(c) Convex mirror only
(d) Both concave and convex mirrors
Ans: (b) Plane mirror only

6. If an object is placed at a distance of 0.5 m in front of a plane mirror, the distance between the object and the image formed by the mirror will be
(a) 2 m (b) 1 m (c) 0.5 m (d) 0.25 m
Ans: (b) 1 m

7. You are provided with a concave mirror, a convex mirror, a concave lens and a convex lens. To obtain an enlarged image of an object you can use either
(a) concave mirror or convex mirror
(b) concave mirror or convex lens
(c) concave mirror or concave lens
(d) concave lens or convex lens
Ans: (b) concave mirror or convex lens

8. An erect and enlarged image can be formed by
(a) only a convex mirror (b) only a concave mirror
(c) only a plane mirror
(d) both convex and concave mirror
Ans: (b) only a concave mirror

9. An image formed by a lens is erect. Such an image could be formed by a
(a) convex lens provided the image is smaller than object
(b) concave lens provided the image is smaller than object
(c) concave lens provided the image is larger than object
(d) concave lens provided the image is of the same size
Ans: (b) concave lens provided the image is smaller than object

10. Change in the path of light after striking a mirror is called
(a) reflection of light (b) Rectilinear propagation of light
(c) Lateral inversion (d) Dispersion
Ans: (a) reflection of light

11. Splitting of white light into seven colours is called
(a) reflection of light (b) Rectilinear propagation of light
(c) Lateral inversion (d) Dispersion
Ans: (d) Dispersion

12. When white light is passed into a prism it splits into
(a) Seven colours (b) Eight colours
(c) Five colours (d) Three colours
Ans: (a) Seven colours

13. The middle colour in sunlight spectrum is:
(a) yellow (b) green (c) blue (d) orange
Ans: (b) green

14. The image formed by a convex mirror is:
(a) erect and diminished (b) erect and enlarged
(c) inverted and diminished (d) inverted and enlarged
Ans: (a) erect and diminished

15. The image which can be caught on a screen is called
(a) Real image (b) Virtual image
(c) Shadow (d) Impression
Ans: (a) Real image

16. The object in which seven colours spread over it appears to be white in colour when rotated is Called
(a) Galileo's disc (b) Newton's disc
(c) Rutherford's disc (d) Faraday's disc
Ans: (b) Newton's disc

17. When the Newton's disc is rotated what happens
(a) The colours fade to white
(b) The colours fade to black
(c) Rutherford's disc (d) Faraday's disc
Ans: (b) The colours fade to black

18. Rectilinear propagation is
(a) mode of travelling in curved lines
(b) mode of travelling in straight lines
(c) ability to bend around obstacles
(d) displaying the phenomenon of diffraction
Ans: (b) mode of travelling in straight lines

19. Which of the following is used as a side view mirror?
(a) Plane mirror (b) Concave mirror
(c) Convex mirror (d) Convex lens
Ans: (c) Convex mirror

20. Looking through a lens at the sun or a bright light is:
(a) easy (b) dangerous (c) difficult (d) good
Ans: (b) dangerous

21. Which colour of light scattered least
(a) Green (b) Yellow (c) Red (d) Blue
Ans: (c) Red

22. The coloured band of light obtained by dispersion of light is called
(a) image (b) spectrum
(c) convergence (d) scattering
Ans: (b) spectrum

23. Light is a form of
(a) Energy (b) Power (c) Heat (d) Temperature
Ans: (a) Energy

24. .....refers to collection of rays.

(a) Shadow (b) Photon (c) Beam (d) Image
Ans: (c) Beam

25. Concave lens is also known as
(a) Converging lens (b) Diverging lens
(c) Bifocal length (d) Biconcave lens
Ans: (b) Diverging lens

26. If an object is placed at a distance of 0.5 meter in front of a plane mirror, the distance between the object and the image formed by the mirror will be:
(a) 2 m (b)1 m (c) 0.5 m (d) 0.25 m
Ans: (b)1 m

27. A virtual image larger than the object can be produced by a:
(a) Concave lens (b) Concave mirror
(c) Convex mirror (d) Plane mirror
Ans: (b) Concave mirror

28. The image formed by a concave mirror is seen to be virtual, erect and larger than the object. The position of object must then be:
(a) Between focal length and twice the focal length
(b) Far off (many times the focal length)
(c) Close to concave mirror (at less than focal length)
(d) Greater than twice the focal length
Ans: (c) Close to concave mirror (at less than focal length)

29. If the image formed is always virtual, the mirror can be
(a) Concave or convex (b) Concave or plane
(c) Convex or plane (d) Only convex
Ans: (c) Convex or plane

30. A concave mirror cannot be used as:
(a) A magnifying mirror (b) A torch reflector
(c) A dentist's mirror (d) A rear view mirror
Ans: (d) A rear view mirror

31. Read the following sentences carefully, and choose the incorrect one:
(a) The process of sending back the rays of light which fall on the surface of an object is called reflection of light.
(b) The ray of light which falls on an object is called incident ray.
(c) And the ray of light which is sent back by an object is called reflected ray.
(d) The objects having polished, shining surfaces reflect less light than objects having unpolished dull surfaces.
Ans: (d)

32. A rainbow can be seen in the sky
(a) When the sun is in front of you
(b) When the sun is behind you
(c) When the sun is overhead (d) Only at time of sunrise
Ans: (b) When the sun is behind you

33. The image formed by a plane mirror is:
(a) Virtual, behind the mirror and enlarged
(b) Virtual, behind the mirror and of the same size as the object
(c) Real, at the surface of the mirror and enlarged
(d) Real, behind the mirror and of the same size as the Object
Ans: (b) Virtual, behind the mirror and of the same size as the Object.

34. Which of the following always diverge light rays?
(a) Convex mirror and plane mirror
(b) Concave mirror and convex lens
(c) Concave lens and concave mirror
(d) Concave lens and convex mirror
Ans: (d) Concave lens and convex mirror

35. An image formed by a lens is erect. Such an image could be formed by a:
(a) Convex lens provided the image is smaller than object
(b) Concave lens provided the image is smaller than object
(c) Concave lens provided the image is larger than object
(d) Concave lens provided the image is same of the image.
Ans: (b)

Assertion & Reason Questions

1. Assertion (A): The angle of incidence is always equal to the angle of reflection.
Reason (R): According to the laws of reflection, the incident ray, reflected ray, and the normal lie in the same plane.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

2. Assertion (A): The image formed by a plane mirror is laterally inverted.
Reason (R): A plane mirror reverses the sides of an object from left to right.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

3. Assertion (A): A shadow is formed only when an opaque object blocks light.
Reason (R): Light travels in a straight line.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

4. Assertion (A): A periscope uses mirrors placed parallel to each other.
Reason (R): Periscopes work on the principle of multiple reflection of light.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

5. Assertion (A): A prism splits white light into seven colours.
Reason (R): Different colours of light bend by different amounts on passing through a prism.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

Matching

1. Types of Mirrors and Their Uses

Mirror	Common Use
(i) Plane mirror	Looking glass
(ii) Concave mirror	Shaving mirror
(iii) Convex mirror	Rear-view mirror
(iv) Concave mirror	Security in shops

Choose the correct option
a) (i), (ii), (iii) only b) (i), (iii) only c) All (i–iv) d) (i), (ii), (iii) only
Ans: a) (i), (ii), (iii) only

2. Lenses and Their Uses

Lens	Application
(i) Convex lens	Magnifying glass
(ii) Concave lens	Spectacles for short-sightedness
(iii) Convex lens	Simple microscope
(iv) Concave lens	Concentrates sunlight to a point

Choose the correct option
a) (i), (ii), (iii) only b) (i), (iii), (iv) only c) (i), (ii), (iii) only d) All (i–iv)
Ans: c) (i), (ii), (iii) only

3. Reflection and Related Concepts

Concept	Example
(i) Regular reflection	Image in a plane mirror
(ii) Diffused reflection	Light from a wall
(iii) Multiple reflection	Kaleidoscope
(iv) Irregular reflection	Shiny stainless steel plate

Choose the correct option
a) (i), (ii), (iii) only b) (i), (ii), (iv) only c) All (i–iv) d) (ii), (iii), (iv) only
Ans: a) (i), (ii), (iii) only

4. Properties of Images in a Plane Mirror

Property	Correct/Incorrect
(i) Image is erect	Correct
(ii) Image is real	Incorrect
(iii) Image is laterally inverted	Correct
(iv) Image is of the same size	Correct

Choose the correct option
a) (i), (iii), (iv) only b) (i), (ii), (iv) only c) All (i–iv) d) (ii), (iii) only
Ans: a) (i), (iii), (iv) only

5. Devices Using Reflection of Light

Device	Principle
(i) Kaleidoscope	Multiple reflection
(ii) Periscope	Reflection from plane mirrors
(iii) Solar cooker	Reflection from concave mirror
(iv) Microscope	Reflection only

Choose the correct option

a) (i), (ii), (iii) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (iii), (iv) only

Ans: a) (i), (ii), (iii) only

Choose the Correct or incorrect Sentence/Statement

1. Which of the following are correct?

a) A mirror changes the direction of light that falls on it. b) The image formed by a plane mirror is laterally inverted.

c) A plane mirror always forms a virtual and erect image. d) A plane mirror forms an image smaller than the object.

A) a, b and c B) b and d C) a and d D) c and d

Ans: A) a, b and c

2. Which of the following are correct?

a) Light travels in a straight line in a homogeneous medium.

b) A pinhole camera shows an inverted image of objects.

c) Shadows are formed because light bends around objects.

d) The size of a shadow depends on the distance between the source and the object.

A) a, b and d B) b, c and d C) a and c D) a, c and d

Ans: A) a, b and d

3. Which of the following are correct?

a) Concave mirrors can form real as well as virtual images. b) Convex mirrors always form virtual and diminished images.

c) Concave mirrors are used as shaving mirrors. d) Convex mirrors are used as rear-view mirrors in vehicles.

A) a, b and c B) a, b and d C) a, c and d D) a, b, c and d

Ans: D) a, b, c and d

4. Which of the following are correct?

a) The image formed by a convex lens can be real or virtual. b) A concave lens always forms a virtual and erect image.

c) Lenses refract light rays passing through them. d) A concave lens can form a magnified real image.

A) a, b and c B) b and d C) a, c and d D) a, b and d

Ans: A) a, b and c

5. Which of the following are correct?

a) Dispersion of light produces a spectrum of seven colours.

b) The band of colours formed by dispersion is called a rainbow on paper.

c) A prism splits white light into its component colours. d) Violet light is deviated the least in a prism.

A) a, b and c B) a, c and d C) b, c and d D) a, b and d

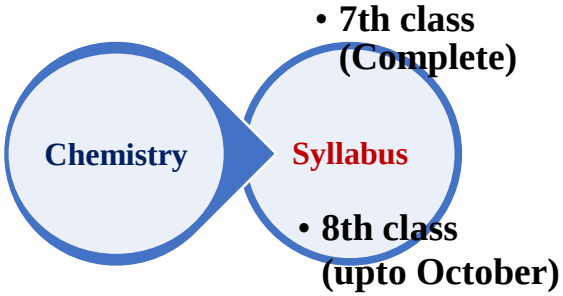
Ans: B) a, c and d

SCHOLASTIC APTITUDE TEST

Chemistry

103 -113 Questions

11 Marks



Chapter: Particulate Nature of Matter 8th CLASS

1. Matter is composed of
A) Only visible particles B) Extremely minute particles
C) Only liquid particles D) Only living particles
Ans: B) Extremely minute particles

2. The smallest units of a substance obtained by continuously breaking it down are called
A) Molecules only B) Constituent particles
C) Cells D) Tissues
Ans: B) Constituent particles

3. When a piece of chalk is repeatedly broken and powdered, the
A) Substance changes into another substance
B) Particles disappear C) Size of particles decreases
D) Chemical composition necessarily changes
Ans: C) Size of particles decreases

4. Sugar dissolved in water can no longer be seen because
A) Sugar is destroyed
B) Sugar particles occupy spaces between water particles
C) Water changes into sugar
D) Sugar evaporates immediately
Ans: B) Sugar particles occupy spaces between water particles

5. Which observation supports the particulate nature of matter?
A) Sugar disappears when dissolved but the water tastes sweet
B) Stones have no particles
C) Liquids have no particles
D) Gases have no particles
Ans: A)Sugar disappears when dissolved but the water tastes sweet

6. The particles present between the particles of another substance are called
A) Interparticle spaces B) Cells
C) Vacuoles D) Crystals
Ans: A) Interparticle spaces

7. Constituent particles of matter are held together by
A) Gravitational force only
B) Interparticle attractive forces
C) Magnetic force only D) Friction only
Ans: B) Interparticle attractive forces

8. The strength of interparticle attraction generally depends on
A) Colour of the substance B) Distance between particles
C) Shape of the container only D) Mass of the container
Ans: B) Distance between particles

9. In which state are particles packed most closely?
A) Solid B) Liquid C) Gas D) Plasma
Ans: A) Solid

10. In a solid, interparticle attraction is generally
A) Maximum B) Minimum C) Zero D) Negligible
Ans: A) Maximum

11. Particles in a solid mainly
A) Move freely in all directions
B) Vibrate about their fixed positions
C) Move very far apart
D) Have no motion at all under all conditions
Ans: B) Vibrate about their fixed positions

12. A solid has
A) No definite shape and no definite volume
B) Definite shape and definite volume
C) Definite shape but no volume
D) No definite shape but definite volume
Ans: B) Definite shape and definite volume

13. When a solid is heated sufficiently, its particles
A) Stop moving B) Vibrate more vigorously
C) Become motionless D) Disappear
Ans: B) Vibrate more vigorously

14. The temperature at which a solid melts at atmospheric pressure is called its
A) Boiling point B) Melting point
C) Freezing point only D) Evaporation point
Ans: B) Melting point

15. The melting point of ice is
A) 0°C B) 50°C C) 100°C D) 133°C
Ans: A) 0°C

16. The melting point of iron is
A) 0°C B) 100°C C) 133°C D) 1538°C
Ans: D) 1538°C

17. Which state has particles that can move more freely than in solids but remain relatively close?
A) Solid B) Liquid C) Gas D) None
Ans: B) Liquid

18. A liquid has
A) Definite shape and definite volume
B) No definite shape but definite volume
C) Definite shape but no volume
D) Neither definite shape nor volume
Ans: B) No definite shape but definite volume

19. Why does a liquid take the shape of its container?
A) Its particles are fixed permanently
B) Its particles can move relative to one another
C) It has no particles
D) Its particles are completely motionless
Ans: B) Its particles can move relative to one another

20. When water is heated to boiling, it changes from
A) Solid to liquid B) Liquid to gas
C) Gas to liquid D) Solid to gas only
Ans: B) Liquid to gas

21. The change of a liquid into vapour at temperatures below its boiling point is called
A) Melting B) Freezing
C) Evaporation D) Condensation
Ans: C) Evaporation

22. Which state of matter has the maximum interparticle spacing?
A) Solid B) Liquid C) Gas D) All are equal
Ans: C) Gas

23. In gases, interparticle attraction is
A) Maximum B) Strong
C) Minimum/negligible D) Equal to that in solids
Ans: C) Minimum/negligible

24. Gas particles

A) Are closely packed and fixed
B) Move freely in all directions
C) Only vibrate at fixed positions
D) Cannot move

Ans: B) Move freely in all directions

25. Gases have

A) Definite shape and definite volume
B) Definite volume only C) Definite shape only
D) Neither definite shape nor definite volume

Ans: D) Neither definite shape nor definite volume

26. The smoke spreading throughout a gas jar demonstrates

A) Particles of gases are stationary
B) Particles of gases are in continuous motion
C) Gases have no particles D) Gases have fixed shape

Ans: B) Particles of gases are in continuous motion

27. Diffusion is fastest in

A) Solids B) Liquids C) Gases D) All states equally

Ans: C) Gases

28. The smell of an incense stick spreading throughout a room is an example of

A) Melting B) Diffusion
C) Freezing D) Sedimentation

Ans: B) Diffusion

29. Potassium permanganate spreading through water demonstrates that

A) Water particles are stationary
B) Particles of matter are in continuous motion
C) Solids have no particles
D) Liquids cannot mix

Ans: B) Particles of matter are in continuous motion

30. Diffusion of potassium permanganate in water occurs because

A) Water particles are continuously moving
B) Potassium permanganate has no particles
C) Water has no interparticle spaces
D) Particles are fixed

Ans: A) Water particles are continuously moving

31. At higher temperature, diffusion generally occurs

A) More slowly B) Faster
C) Not at all D) Only in solids

Ans: B) Faster

32. Which state has the greatest interparticle spacing?

A) Solid B) Liquid
C) Gas D) Solid and liquid equally

Ans: C) Gas

33. Which state has the strongest interparticle attractive forces?

A) Solid B) Liquid
C) Gas D) All have equal forces

Ans: A) Solid

34. Which of the following is NOT a characteristic of solids?

A) Particles are closely packed
B) Strong interparticle attraction
C) Particles move freely in all directions
D) Definite shape

Ans: C) Particles move freely in all directions

35. Which of the following is NOT a characteristic of gases?

A) Maximum interparticle spacing
B) Weak/negligible interparticle attraction
C) Particles move freely D) Definite shape

Ans: D) Definite shape

36. When sugar dissolves in water, the total volume of the solution may be less than the simple sum of the original volumes because

A) Sugar disappears completely
B) Sugar particles occupy spaces between water particles
C) Water particles disappear
D) Sugar changes into gas

Ans: B) Sugar particles occupy spaces between water particles

37. Sand does not dissolve in water because

A) Sand has no particles
B) Sand particles settle down and do not occupy the spaces in the same way as dissolved sugar
C) Water has no spaces D) Sand is a gas

Ans: B) Sand particles settle down and do not occupy the spaces in the same way as dissolved sugar

38. When a gas is compressed using a syringe, its volume decreases because

A) Gas particles disappear
B) Interparticle spaces decrease
C) Particles become solid immediately
D) Gas changes into water

Ans: B) Interparticle spaces decrease

39. Liquids are difficult to compress compared with gases because

A) Liquid particles have very large empty spaces
B) Liquid particles are relatively close together
C) Liquids have no particles
D) Liquid particles do not move

Ans: B) Liquid particles are relatively close together

40. Which statement correctly compares the three states of matter?

A) Solids have maximum spacing and gases minimum spacing
B) Solids have strongest attraction and gases weakest attraction
C) Liquids have no particle movement
D) Gases have definite shape

Ans: B) Solids have strongest attraction and gases weakest attraction

Assertion & Reason

1. Assertion (A): Broad bag straps are more comfortable than narrow straps.
Reason (R): For the same force, increasing the area decreases pressure.
A) Both A and R are true, and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanation of A
C) A is true, R is false
D) A is false, R is true
Ans: A

2. Assertion (A): Water comes out with greater force from a lower hole in a bottle.
Reason (R): Pressure exerted by a liquid increases with depth.
A) Both A and R are true, and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanation of A
C) A is true, R is false
D) A is false, R is true
Ans: A

3. Assertion (A): Wind moves from a high-pressure region towards a low-pressure region.
Reason (R): A difference in air pressure causes air to move from higher pressure to lower pressure.
A) Both A and R are true, and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanation of A
C) A is true, R is false
D) A is false, R is true
Ans: A

4. Assertion (A): A roof may be blown away during very high-speed winds.
Reason (R): Faster-moving air over the roof produces lower pressure, creating a pressure difference.
A) Both A and R are true, and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanation of A
C) A is true, R is false
D) A is false, R is true
Ans: A

5. Assertion (A): The centre of a cyclone is called the eye.
Reason (R): The centre of a cyclone is a region of highest pressure where winds are calm.
A) Both A and R are true, and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanation of A
C) A is true, R is false
D) A is false, R is true
Ans: C

Matching

1. Match the quantity/term with its description.

Column–I	Column–II
1. Pressure	a. Pressure exerted by surrounding air
2. Atmospheric pressure	b. Force per unit area
3. Pascal	c. SI unit of pressure
4. Wind	d. Moving air

A) 1-a, 2-b, 3-d, 4-c B) 1-b, 2-a, 3-c, 4-d C) 1-c, 2-d, 3-a, 4-b D) 1-d, 2-c, 3-b, 4-a
Ans: B

2. Match the situation with the correct explanation.

Column–I	Column–II
1. Broad bag straps	a. Greater pressure at greater depth
2. Sharp knife	b. Reduced pressure on shoulders
3. Dam has broad base	c. Greater pressure for smaller area
4. Water from lower hole	d. Greater liquid pressure at greater depth

A) 1-a, 2-d, 3-c, 4-b B) 1-c, 2-b, 3-d, 4-a C) 1-d, 2-a, 3-b, 4-c D) 1-b, 2-c, 3-a, 4-d
Ans: D

3. Match the phenomenon with the principle/concept.

Column–I	Column–II
1. Wind formation	a. Bernoulli's principle
2. Roof blown away by high-speed wind	b. Pressure difference
3. Suction cup	c. Atmospheric pressure
4. Cyclone	d. Low-pressure system

A) 1-b, 2-a, 3-c, 4-d B) 1-a, 2-b, 3-d, 4-c C) 1-c, 2-d, 3-a, 4-b D) 1-d, 2-c, 3-b, 4-a

Ans: A

4. Match the weather event with the relevant feature.

Column–I	Column–II
1. Thunderstorm	a. Eye
2. Lightning	b. Electrical discharge
3. Cyclone	c. Strong winds, rain and lightning
4. Lightning conductor	d. Safe path for electrical discharge to ground

A) 1-c, 2-b, 3-a, 4-d B) 1-b, 2-c, 3-d, 4-a C) 1-a, 2-d, 3-b, 4-c D) 1-d, 2-a, 3-c, 4-b

Ans: A

5. Match the condition with the result.

Column–I	Column–II
1. Smaller area for same force	a. Higher wind speed
2. Greater depth in liquid	b. Greater pressure
3. Greater pressure difference	c. Greater pressure
4. Faster moving air	d. Lower pressure

A) 1-d, 2-a, 3-b, 4-c B) 1-b, 2-c, 3-d, 4-a C) 1-c, 2-b, 3-a, 4-d D) 1-a, 2-d, 3-c, 4-b

Ans: C

Choose the Correct Sentence/Statement

1. Choose the CORRECT statement.

A) Pressure is force multiplied by area.
B) Pressure is force per unit area.
C) Pressure is independent of area.
D) Pressure is measured in kilograms.

Ans: B

2. Choose the INCORRECT statement.

A) Liquids exert pressure on the bottom of containers.
B) Liquids exert pressure on the sides of containers.
C) Liquid pressure increases with depth.
D) Liquid pressure is greatest at the surface and decreases with depth.

Ans: D

3. Choose the CORRECT statement.

A) Air moves from low pressure to high pressure.
B) Warm air generally rises because it becomes lighter.
C) Wind has no relation to pressure difference.
D) Greater pressure difference always produces slower winds.

Ans: B

4. Choose the INCORRECT statement.

A) Lightning is an electrical discharge.
B) Lightning may occur between clouds or between cloud and ground.
C) Standing under an isolated tree during lightning is recommended.
D) A lightning conductor provides a path for electrical discharge to the ground.

Ans: C

5. Choose the CORRECT statement.

A) The centre of a cyclone is a high-pressure region.
B) The eye of a cyclone is generally calm compared with the surrounding region.
C) Cyclones form only over deserts.
D) Cyclones have no relation to low pressure.

Ans: B

Chapter: Solutions 8th CLASS

1. A homogeneous mixture of two or more substances is called a
A) Suspension B) Solution
C) Compound D) Element
Ans: B

2. In a solution, the substance that dissolves is called the
A) Solvent B) Solute C) Mixture D) Residue
Ans: B

3. In a solution, the substance in which the solute dissolves is called the
A) Solvent B) Solute C) Residue D) Precipitate
Ans: A

4. Which of the following is a solution?
A) Sand and water B) Salt and water
C) Oil and water D) Sawdust and water
Ans: B

5. In a salt-water solution, salt is the
A) Solvent B) Solute C) Indicator D) Residue
Ans:

6. In a salt-water solution, water is the
A) Solute B) Solvent C) Precipitate D) Crystal
Ans: B

7. Which of the following is a homogeneous mixture?
A) Salt water B) Sand and water
C) Sawdust and water D) Oil and water
Ans: A

8. Which of the following is a non-uniform mixture?
A) Salt water B) Sugar solution
C) Sand and water D) Air
Ans: C

9. In a solution, the solute is
A) Unevenly distributed B) Evenly distributed
C) Always visible D) Always a solid
Ans: B

10. Air is considered a
A) Compound B) Solution of gases
C) Pure element D) Suspension
Ans: B

11. In air, the gas present in the largest amount is
A) Oxygen B) Carbon dioxide
C) Nitrogen D) Hydrogen
Ans: C

12. A solution in which no more solute can dissolve at a particular temperature is called a
A) Dilute solution B) Saturated solution
C) Unsaturated solution D) Concentrated solvent
Ans: B

13. A solution in which more solute can still dissolve at a particular temperature is called an
A) Saturated solution B) Unsaturated solution
C) Pure solution D) Concentrated solvent
Ans: B

14. If added salt remains undissolved at the bottom of a solution, the solution has most likely become
A) Unsaturated B) Saturated
C) Pure water D) Dilute
Ans: B

15. The maximum amount of solute that dissolves in a fixed quantity of solvent at a particular temperature is called
A) Density B) Solubility
C) Volume D) Concentration only
Ans: B

16. Solubility is affected by
A) Temperature B) Nature of solute and solvent
C) Both A and B D) Neither A nor B
Ans: C

17. For many solid solutes, solubility in water generally
A) Increases with increase in temperature
B) Always decreases with temperature
C) Remains zero D) Does not depend on temperature
Ans: A

18. According to the chapter's activity, more baking soda dissolves in water at
A) 25°C than 70°C B) 50°C than 70°C
C) 70°C than 50°C D) Both temperatures equally
Ans: C

19. Which factor generally decreases the solubility of gases in liquids?
A) Increase in temperature B) Decrease in temperature
C) Decrease in pressure D) Stirring
Ans: A

20. Aquatic organisms can survive in water partly because
A) Oxygen dissolves in water B) Nitrogen becomes a solid
C) Water contains no gases
D) Carbon dioxide cannot dissolve
Ans: A

21. Density is defined as
A) Volume / Mass B) Mass / Volume
C) Mass × Volume D) Mass + Volume
Ans: B

22. The SI unit of density is
A) kg/m^3 B) g/cm C) kg/cm^3 D) g/L only
Ans: A

23. An object has a mass of 200 g and volume of 100 cm^3. Its density is
A) 0.5 g/cm^3 B) 2 g/cm^3 C) 20 g/cm^3 D) 200 g/cm^3
Ans: B

24. If the mass of an object remains constant and its volume increases, its density
A) Increases B) Decreases
C) Remains exactly the same D) Becomes zero
Ans: B

25. Density of a substance is generally independent of its
A) Mass B) Volume
C) Shape and size D) Temperature
Ans: C

26. Relative density is the ratio of
A) Mass of a substance to its volume

B) Density of a substance to the density of water
C) Volume of water to mass of substance
D) Mass to weight

Ans: B

27. Relative density

A) Has the unit kg/m³ B) Has the unit g/cm³
C) Has no unit D) Has the unit newton

Ans: C

28. An object with relative density less than 1 will generally

A) Sink in water B) Float in water
C) Always remain suspended D) Become heavier

Ans: B

29. An object with relative density greater than 1 will generally

A) Float in water B) Sink in water
C) Evaporate D) Dissolve completely

Ans: B

30. Which instrument is used to measure mass in the activity shown in the chapter?

A) Thermometer B) Digital weighing balance
C) Measuring cylinder D) Spring balance

Ans: B

31. Mass is the

A) Force with which Earth attracts an object
B) Quantity of matter present in an object
C) Volume occupied by an object
D) Density of an object

Ans: B

32. Weight is

A) Quantity of matter
B) Force with which Earth or another celestial body attracts an object
C) Space occupied by an object
D) Density of an object

Ans: B

33. The common instrument used to measure the volume of a liquid is

A) Measuring cylinder B) Digital balance
C) Spring balance D) Thermometer

Ans: A

34. The curved surface of a liquid in a measuring cylinder is called

A) Surface tension B) Meniscus
C) Interface D) Boundary layer

Ans: B

35. While measuring a liquid in a measuring cylinder, the reading should generally be taken at the

A) Top of the cylinder B) Bottom of the meniscus
C) Side of the cylinder D) Middle of the cylinder

Ans: B

36. The volume of a cuboid is calculated using

A) l + b + h B) l × b × h C) l/b/h D) 2(l + b + h)

Ans: B) l × b × h

37. The volume of an irregular solid can be determined by

A) Using a thermometer B) Water displacement method
C) Using a spring balance only
D) Measuring its temperature

Ans: B

38. An object displaces 25 mL of water. Its volume is

A) 5 mL B) 20 mL C) 25 mL D) 50 mL

Ans: C

39. Ice floats on water because

A) Ice has greater density than water
B) Ice has lower density than water
C) Ice has no mass D) Water has no density

Ans: B

40. The density of water is maximum at approximately

A) 0°C B) 4°C C) 25°C D) 100°C

Ans: B

Assertion & Reason

1. Assertion (A): Salt water is a homogeneous mixture.
Reason (R): The salt particles are uniformly distributed throughout the water.
A) Both A and R are true, and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanation of A
C) A is true, R is false
D) A is false, R is true

Ans: A

2. Assertion (A): A saturated solution cannot dissolve more solute at a particular temperature.
Reason (R): The solvent has reached its capacity to dissolve that solute at that temperature.
A) Both A and R are true, and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanation of A
C) A is true, R is false
D) A is false, R is true

Ans: A

3. Assertion (A): Gases generally become less soluble in water when temperature increases.
Reason (R): The chapter's activity shows that more gas can dissolve in colder water than in warmer water.

A) Both A and R are true, and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanation of A
C) A is true, R is false
D) A is false, R is true

Ans: A

4. Assertion (A): An object with density less than that of water generally floats on water.
Reason (R): Such an object is less dense than water.

A) Both A and R are true, and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanation of A
C) A is true, R is false
D) A is false, R is true

Ans: A

5. Assertion (A): The density of water is maximum at 4°C.
Reason (R): This property allows liquid water to remain beneath ice in cold regions.

A) Both A and R are true, and R is the correct explanation of A
B) Both A and R are true, but R is not the correct explanation of A
C) A is true, R is false
D) A is false, R is true

Ans: A

Matching

1. Match the term with its meaning.

Column–I	Column–II
1. Solute	a. Substance in which solute dissolves
2. Solvent	b. Maximum amount of solute that dissolves
3. Solubility	c. Substance that dissolves
4. Saturated solution	d. Solution in which no more solute can dissolve

A) 1-c, 2-a, 3-b, 4-d B) 1-a, 2-c, 3-d, 4-b C) 1-b, 2-d, 3-a, 4-c D) 1-d, 2-b, 3-c, 4-a

Ans: A

2. Match the mixture with its type.

Column–I	Column–II
1. Salt water	a. Non-uniform mixture
2. Sugar water	b. Homogeneous mixture
3. Sand and water	c. Homogeneous mixture
4. Sawdust and water	d. Non-uniform mixture

A) 1-a, 2-b, 3-d, 4-c B) 1-b, 2-c, 3-a, 4-d C) 1-c, 2-d, 3-b, 4-a D) 1-d, 2-a, 3-c, 4-b

Ans: B

3. Match the quantity with its formula/instrument.

Column–I	Column–II
1. Density	a. Mass / Volume
2. Volume of cuboid	b. l × b × h
3. Liquid volume	c. Measuring cylinder
4. Mass	d. Digital weighing balance

A) 1-d, 2-c, 3-b, 4-a B) 1-b, 2-a, 3-d, 4-c C) 1-c, 2-d, 3-a, 4-b D) 1-a, 2-b, 3-c, 4-d

Ans: D

4. Match the concept with the correct statement.

Column–I	Column–II
1. Relative density	a. Curved surface of liquid
2. Meniscus	b. Ratio of density to density of water
3. Density	c. Mass per unit volume
4. Displacement method	d. Volume of irregular solid

A) 1-b, 2-a, 3-c, 4-d B) 1-a, 2-b, 3-d, 4-c C) 1-c, 2-d, 3-a, 4-b D) 1-d, 2-c, 3-b, 4-a

Ans: A

5. Match the observation with the correct inference.

Column–I	Column–II
1. More salt remains undissolved	a. Ice has lower density than water
2. Gas dissolves less in warm water	b. Solution may be saturated
3. Object causes water level to rise	c. Solubility of gas decreases with temperature
4. Ice floats on water	d. Object has volume equal to displaced water

A) 1-a, 2-d, 3-c, 4-b B) 1-c, 2-b, 3-a, 4-d C) 1-b, 2-c, 3-d, 4-a D) 1-d, 2-a, 3-b, 4-c

Ans: C

Choose the Correct Sentence/Statement

1. Choose the CORRECT statement.

A) The solute is the substance in which another substance dissolves.
B) The solvent is the substance that dissolves in the solvent.
C) A solution is a homogeneous mixture. D) Sand and water always form a solution.

Ans: C

2. Choose the INCORRECT statement.

A) A saturated solution contains the maximum amount of dissolved solute at a given temperature.
B) An unsaturated solution can dissolve more solute at that temperature.
C) Solubility can depend on temperature. D) Solubility is always independent of temperature.

Ans: D

3. Choose the CORRECT statement.

A) Density = Volume/Mass B) Density = Mass/Volume
C) Density has no relation to mass and volume. D) Density of every substance is exactly the same.

Ans: B

4. Choose the INCORRECT statement.

A) A measuring cylinder is used to measure liquid volume.
B) An irregular solid's volume can be determined by water displacement.
C) The bottom of the meniscus is used for reading water in a measuring cylinder.
D) A thermometer is the standard instrument for measuring the volume of a liquid.

Ans: D

5. Choose the CORRECT statement.

A) Ice is denser than liquid water. B) Ice floats because its density is lower than that of water.
C) Water has maximum density at 0°C. D) Density has no effect on floating and sinking.

Ans: B

Chapter: Acids, Bases and Salts 7th CLASS

1. An oxide is acidic and has a pungent odour. It could be
(a) sulphur dioxide (b) carbon dioxide
(c) sodium oxide (d) nitrogen dioxide
Ans: (d) nitrogen dioxide

2. Out of these gases which one is used in fire extinguishers
(a) CO_2 (b) SO_2 (c) NO_2 (d) H_2S
Ans: (a) CO_2

3. The correct way of making a solution of acid in water is to
(a) add water to acid (b) add acid to water
(c) mix acid and water simultaneously
(d) add water to acid in a shallow container
Ans: (b) add acid to water

4. Products of a neutralisation reaction are always:
(a) an acid and a base (b) an acid and a salt
(c) a salt and water (d) a salt and a base
Ans: (c) a salt and water

5. Turmeric is a natural indicator. On adding its paste to acid and base separately, which colours would be observed.
(a) Yellow in both acid and base
(b) Yellow in acid and red in base
(c) Pink in acid and yellow in base
(d) Red in acid and blue in base
Ans: (b) Yellow in acid and red in base

6. Phenolphthalein is a synthetic indicator and its colours in acidic and basic solutions, respectively are:
(a) red and blue (b) blue and red
(c) pink and colourless (d) colourless and pink
Ans: (d) colourless and pink

7. When the soil is too basic, plants do not grow well in it. To improve its quality what must be added to the soil?
(a) Organic matter (b) Quick lime
(c) Slaked lime (d) Calamine solution
Ans: (a) Organic matter

8. Which of the following set of substances contain acids?
(a) Grapes, lime water (b) Vinegar, soap
(c) Curd, milk of magnesia (d) Curd, vinegar
Ans: (d) Calamine solution

9. On adding phenolphthalein indicator to a colourless solution, no change is observed. What is the nature of this solution?
(a) Basic (b) Either acidic or basic
(c) Either acidic or neutral (d) Either basic or neutral
Ans: (c) Either acidic or neutral

10. Which of the following is an acid-base indicator?
(a) Vinegar (b) Lime water
(c) Turmeric (d) Baking soda
Ans: (c) Turmeric

11. Which of the following is not a indicator?
(a) Phenolphthalein (b) Methyl orange
(c) Litmus (d) Methyl chloride
Ans: (d) Methyl chloride

12. When CO2 gas is passed through lime water, it turns milky. Which of the following compounds is responsible for this milkiness?
(a) Calcium oxide (b) Calcium chloride
(c) sodium carbonate (d) Calcium carbonate
Ans: (d) Calcium carbonate

13. The reaction in which an acid react with a base to form salt and water is called as
(a) Addition reaction (b) Displacement reaction
(c) Neutralisation reaction (d) Substitution reaction
Ans: (c) Neutralisation reaction

14. Which of the following ion is responsible for the acidic nature of hydrochloric acid?
(a) Hydrogen ion (b) Hydroxide ion
(c) Chloride ion (d) Hydrochloride ion
Ans: a) Hydrogen ion

15. Acid present in soured curd is
(a) Lactic acid (b) Acetic acid
(c) Tartaric acid (d) Oxalic add
Ans: (a) Lactic acid

16. Distilled water is:
(a) acidic (b) basic (c) neutral (d) none of these
Ans: (c) neutral

17. Ammonia that turns red litmus blue is:
(a) acidic (b) basic (c) neutral (d) none of these
Ans: (b) basic

18. An antacid tablet is given to a person when he suffers from:
(a) obesity (b) acidity (c) dog bite (d) none of these
Ans: (b) acidity

19. Ant's bite injects:
(a) acetic acid (b) formic acid
(c) hydrochloric acid (d) none of these
Ans: (b) formic acid

20. Litmus is extracted from
(a) curd (b) grapes (c) lichens (d) cabbage
Ans: (c) lichens

21.Acid used in eye wash is
(a) carbonic acid (b) acetic acid
(c) benzoic acid (d) boric acid
Ans: (d) boric acid

22. Magnesium hydroxide is found in:
(a) soap (b) lime water
(c) milk of magnesia (d) vegetable
Ans: (c) milk of magnesia

23. Calcium hydroxide is found in
(a) window cleaner (b) lime water
(c) soap (d) lime juice
Ans: (b) lime water

24. Acid present in cold drinks (soft drinks) is
(a) Carbonic acid (b) Citric acid
(c) Tartaric acid (d) Sulphuric acid
Ans: (a) Carbonic acid

25. Which of the following is a strong Base?
(a) Copper hydroxide (b) Sodium hydroxide
(c) Iron hydroxide (d) Calcium oxide
Ans: (b) Sodium hydroxide

Assertion & Reason Questions

1. Assertion (A): Litmus is a natural indicator used to detect acids and bases.
Reason (R): Acids turn blue litmus red, while bases turn red litmus blue.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

2. Assertion (A): When an acid reacts with a base, a salt and water are formed.
Reason (R): This reaction is called a neutralisation reaction.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

3. Assertion (A): Magnesium hydroxide is used in antacid tablets.
Reason (R): It neutralises excess acid in the stomach and relieves indigestion.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

4. Assertion (A): Acid rain is harmful to buildings made of marble.
Reason (R): Acids in rain react with calcium carbonate in marble and corrode it.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

5. Assertion (A): Baking soda is used in making cakes soft and fluffy.
Reason (R): On heating, baking soda releases carbon dioxide, which helps the cake to rise.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

Matching

1. Common Acids and Their Uses

Acid	Use
(i) Hydrochloric acid (HCl)	In stomach, cleaning metals
(ii) Sulfuric acid (H_2SO_4)	Manufacture of fertilizers, lead-acid battery
(iii) Nitric acid (HNO_3)	Making explosives
(iv) Acetic acid (CH_3COOH)	Fuel in engines

Choose the correct option
a) (i), (ii), (iii) only b) (i), (iii), (iv) only c) All (i–iv) d) (ii), (iii), (iv) only
Ans: a) (i), (ii), (iii) only

2. Common Bases and Their Uses

Base	Use
(i) Sodium hydroxide (NaOH)	Soap manufacture
(ii) Ammonium hydroxide (NH_4OH)	Cleaning agent
(iii) Calcium hydroxide (slaked lime)	Soil treatment, whitewashing
(iv) Magnesium hydroxide	Fertilizer for crops

Choose the correct option
a) (i), (ii), (iii) only b) (i), (ii), (iv) only c) All (i–iv) d) (ii), (iii), (iv) only
Ans: a) (i), (ii), (iii) only

3. Indicators and Their Color Changes

Indicator	Colour in Acid/Base
(i) Litmus	Red in acid, blue in base
(ii) Methyl orange	Red in acid, yellow in base

(iii) Phenolphthalein	Colourless in acid, pink in base
(iv) Turmeric	Yellow in acid, unchanged in base

Choose the correct option

a) (i), (ii), (iii) only b) (i), (ii), (iv) only c) All (i–iv) d) (ii), (iii), (iv) only

Ans: c) All (i–iv)

4. Salts and Their Examples

Salt	Base Used
(i) Sodium chloride (NaCl)	Sodium hydroxide (NaOH)
(ii) Sodium sulfate (Na_2SO_4)	Sodium hydroxide (NaOH)
(iii) Calcium carbonate ($CaCO_3$)	Calcium hydroxide (slaked lime)
(iv) Potassium nitrate (KNO_3)	Potassium hydroxide (KOH)

Choose the correct option

a) (i), (ii), (iii) only b) (i), (ii), (iv) only c) All (i–iv) d) (ii), (iii), (iv) only

Ans: c) All (i–iv)

5. Neutralization and Applications

Reaction/Application	Example
(i) Acid + Base → Salt + Water	HCl + NaOH → NaCl + H_2O
(ii) Treating acidity in stomach	Antacids like $Mg(OH)_2$
(iii) Making soap	Fat + NaOH
(iv) Photosynthesis	HCl + NaOH reaction

Choose the correct option

a) (i), (ii), (iii) only b) (i), (iii), (iv) only c) All (i–iv) d) (ii), (iii), (iv) only

Ans: a) (i), (ii), (iii) only

Choose the Correct Sentence/Statement

1. Which of the following statements are correct?

a) Acids turn blue litmus red. b) Bases turn red litmus blue.

c) Bases have a sour taste. d) Vinegar is an acidic substance.

A) a, b and d B) b and c C) a and c D) c and d

Ans: A) **a, b and d**

2. Which of the following statements are correct?

a) Lemon juice contains citric acid. b) Baking soda is a base.

c) Milk of magnesia is acidic in nature. d) Soap is a base and feels slippery.

A) a, b and d B) b and c C) a and c D) c and d

Ans: A) **a, b and d**

3. Which of the following statements are correct?

a) Bases turn blue litmus red. b) Acids have a sour taste. c) Soap is a base. d) Lemon juice is basic in nature.

A) a, b and c B) b and c C) a and d D) c and d

Ans: B) **b and c**

4. Which of the following statements are correct?

a) Acetic acid is found in vinegar. b) Bases neutralize acids to form salt and water.

c) Hydrochloric acid is found in lemon juice. d) Citric acid is found in tamarind.

A) a and b B) b and c C) a, b and d D) c and d

Ans: A) **a and b**

5. Which of the following statements are correct?

a) Humus increases soil fertility. b) Dead leaves and animal droppings form humus.

c) Lemon juice turns red litmus blue. d) Vinegar is an acid.

A) a, b and d B) b and c C) a and c D) c and d

Ans: A) **a, b and d**

Chapter: Physical and Chemical Changes 7th CLASS

1. In which type of change a new substance is formed?
(a) In physical change (b) In chemical change
(c) In both (a) and (b) (d) In neither of these
Ans: (b) In chemical change

2. Which among the following is a physical change?
(a) Cutting a log of wood in small pieces
(b) Burning of wood (c) Ripening of fruit
(d) Cooking of food
Ans: (a) Cutting a log of wood in small pieces

3. Which is a method to prevent rust?
(a) Crystallization (b) Sedimentation
(c) Galvanisation (d) None of these
Ans: (c) Galvanisation

4. How crystal of pure substances are obtained?
(a) By crystallization (b) By chromatography
(c) By peptization (d) By all these methods
Ans: (a) By crystallization

5. What is the formula of rust?
(a) Fe_2O_3 (b) Fe_3O_4 (c) FeO (d) None of these
Ans: (a) Fe_2O_3

6. When carbon dioxide is passed through lime water, it turns milky due to the formation of
(a) calcium hydroxide (b) calcium carbonate
(c) calcium oxide (d) None of these
Ans: (b) calcium carbonate

7. Iron pillar near the Qutub Minar in Delhi is famous for the following facts. Which of these facts is responsible for its long stability?
(a) It is more than 7 metres high
(b) It weighs about 6000 kg
(c) It was built more than 1600 years ago
(d) It has not rusted after such a long period
Ans: (d) It has not rusted after such a long period

8. Galvanisation is a process used to prevent the rusting of which of the following?
(a) Iron (b) Zinc (c) Aluminium (d) Copper
Ans: (a) Iron

9. Paheli mother made a concentrated sugar syrup by dissolving sugar in hot water. On cooling, crystals of sugar got separated. This indicates a:
(a) physical change that can be reversed
(b) chemical change that can be reversed
(c) physical change that cannot be reversed
(d) chemical change that cannot be reversed
Ans: (a) physical change that can be reversed

10. Which of the following is an example of physical change?
(a) A bud turning into a flower (b) Rusting of iron
(c) Boiling of water (d) Ripening of a tomato
Ans: (c) Boiling of water

11. Properties like size, shape, colour, state of a substance are
(a) chemical properties (b) mental properties
(c) physical properties (d) physicochemical properties
Ans: (c) physical properties

12. Ships suffer a lot of damage from rusting in spite of being painted because:
(a) sea water contains many salts (b) sea water is bitter
(c) sea water is sour (d) sea water is sweet
Ans: (a) sea water contains many salts

13. When you leave a piece of iron in the open for some time, it acquires a film of brownish substance. The substance is called:
(a) acid (b) base (c) rust (d) none of these
Ans: (c) rust

14. Which of the following changes is accompanied by sound?
(a) Photosynthesis (b) Spoilage of food
(c) Explosion of fireworks (d) None of these
Ans: (c) Explosion of fireworks

15. Which characteristic best describes a physical change?
(a) Composition changes
(b) Composition stays the same
(c) Form stays the same (d) Mass is lost
Ans: (c) Form stays the same

16. Which among the following is a physical change?
(a) Burning of wood (b) Ripening of fruit
(c) Cutting a log of wood in small pieces
(d) Cooking of food
Ans: (c) Cutting a log of wood in small pieces

17. A change that affects iron articles and slowly destroys them is:
(a) Rusting (b) Galvanisation
(c) Chemical change (d) Crystallisation
Ans: (a) Rusting

18. Which of these is the smallest particle?
(a) A molecule (b) An atom
(c) A speck of dust (d) A water drop
Ans: (b) An atom

19. In chemical change
(a) Change is reversible
(b) Molecules of a substance change
(c) Molecules of the substance do not change
(d) Substance remain same
Ans: (b) Molecules of a substance change

20. Which of the following is a reversible change?
(a) Melting of ice (b) Germination of seed
(c) Burning of matchstick
(d) Changing of milk into curd
Ans: (a) Melting of ice

21. Rusting of iron is a chemical change because:
(a) it is temporary
(b) it can be cleaned and the original substance recovered
(c) Burning of matchstick
(d) a new substance is formed
Ans: (d) a new substance is formed

22. Which of the following statement is incorrect for a chemical reaction?
(a) Heat may be given out but never absorbed
(b) Sound may be produced

(c) A colour change may take place
(d) A gas may be evolved

Ans: (a) Heat may be given out but never absorbed

23. Rusting occurs when iron is exposed to

(a) oxygen and water (b) soil and rain
(c) breeze and sunlight (d) salt water and clouds

Ans: (a) oxygen and water

24. Which is the formula of ozone?

(a) Fe_2O_3 (b) Fe_3O_2 (c) O_2 (d) O_3

Ans: (d) O_3

25. The reddish brown deposit formed on iron nails kept in a solution of copper sulphate is:

(a) Cu_2O (b) Cu (c) CuO (d) CuS

Ans: (b) Cu

26. A chemical change may involve:

(a) Change in colour only (b) Change in temperature only
(c) Evolution of gas only (d) All of these

Ans: (d) All of these

Assertion & Reason Questions

1. Assertion (A): Rusting of iron occurs when iron is exposed to moist air.
Reason (R): Rusting requires the presence of both water and oxygen.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true

Ans: a) Both A and R are true, and R is the correct explanation of A

2. Assertion (A): Burning of a magnesium ribbon is a chemical change.
Reason (R): It forms a new substance, magnesium oxide, which cannot be reversed to magnesium easily.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true

Ans: a) Both A and R are true, and R is the correct explanation of A

3. Assertion (A): Melting of ice is a chemical change.
Reason (R): It produces water, which has a different composition than ice.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true

Ans: d) A is false, R is true

4. Assertion (A): Crystallisation is used to purify solids like salt and sugar.
Reason (R): Impurities remain dissolved in the solution while pure crystals separate out on cooling.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true

Ans: a) Both A and R are true, and R is the correct explanation of A

5. Assertion (A): Boiling of water is a physical change.
Reason (R): During boiling, no new substance is formed; only the state of water changes from liquid to gas.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true

Ans: a) Both A and R are true, and R is the correct explanation of A

Matching

1. Examples of Physical Changes

Change	Type
(i) Melting of ice	Physical
(ii) Boiling of water	Physical
(iii) Tearing of paper	Physical
(iv) Burning of paper	Chemical

Choose the correct option
a) (i), (ii), (iii) only b) (i), (iii), (iv) only c) All (i–iv) d) (ii), (iii), (iv) only

Ans: a) (i), (ii), (iii) only

2. Examples of Chemical Changes

Change	Observation
(i) Rusting of iron	Formation of new substance

(ii) Cooking food	Permanent change in properties
(iii) Ripening of fruit	Change in taste, color, texture
(iv) Freezing water	Physical change

Choose the correct option

a) (i), (ii), (iii) only b) (i), (ii), (iv) only c) All (i–iv) d) (ii), (iii), (iv) only

Ans: a) (i), (ii), (iii) only

3. Physical Properties Affected / Not Affected

Change	Affected Properties
(i) Dissolving salt in water	Only physical properties
(ii) Breaking glass	Shape, size, not chemical composition
(iii) Burning candle	Chemical composition changes
(iv) Bending metal wire	Only shape changes

Choose the correct option

a) (i), (ii), (iv) only b) (i), (ii), (iii) only c) All (i–iv) d) (ii), (iii), (iv) only

Ans: a) (i), (ii), (iv) only

4. Indicators of Chemical Change

Observation	Example
(i) Gas formation	Vinegar + baking soda
(ii) Color change	Ripening fruit, rusting iron
(iii) Precipitate formation	Mixing solutions of $AgNO_3$ + NaCl
(iv) Melting	Ice → Water

Choose the correct option

a) (i), (ii), (iii) only b) (i), (ii), (iv) only c) All (i–iv) d) (ii), (iii), (iv) only

Ans: a) (i), (ii), (iii) only

5. Reversible vs Irreversible Changes

Change	Type
(i) Freezing water	Reversible
(ii) Dissolving sugar in water	Reversible
(iii) Burning paper	Irreversible
(iv) Rusting of iron	Irreversible

Choose the correct option

a) (i), (ii), (iii) only b) (i), (ii), (iv) only c) All (i–iv) d) (ii), (iii), (iv) only

Ans: b) (i), (ii), (iv) only

Choose the Correct Sentence/Statement

1. Which of the following are correct?

a) Rusting of iron is a chemical change. b) Moist air is necessary for rusting to occur.

c) Rusting can be prevented by painting or greasing. d) Rusting makes iron stronger.

A) a, b and c B) b and d C) a and d D) c and d

Ans: A) a, b and c

2. Which of the following are correct?

a) Melting of ice is a physical change. b) Burning of paper is a chemical change.

c) Freezing of water is a chemical change. d) Evaporation of water is a physical change.

A) a, c and d B) a, b and d C) b and c D) a, b, c and d

Ans: B) a, b and d

3. Which of the following are correct?

a) Crystallisation is used to obtain pure crystals from a solution. b) Crystallisation is a chemical change.

c) Sugar crystals can be prepared by crystallisation. d) Crystallisation is a physical change.

A) a and b B) b, c and d C) a, c and d D) b and d

Ans: C) a, c and d

4. Which of the following are correct?

a) Formation of curd from milk is a chemical change. b) Digestion of food is a physical change.

c) Cooking of food is a chemical change. d) Tearing a piece of paper is a chemical change.

A) a and c B) a, b and d C) a, c and d D) b and d

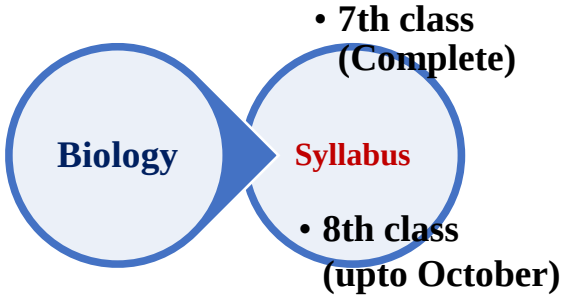
Ans: A) a and c

SCHOLASTIC APTITUDE TEST

Biology

114 -125 Questions

12 Marks



Chapter: The Invisible Living World — 8th CLASS

1. The basic unit of life is
A) Tissue B) Organ C) Cell D) Organ system
Ans: C

2. Who first used the word "cell" in science?
A) Antonie van Leeuwenhoek B) Robert Hooke
C) Louis Pasteur D) Ananda Mohan Chakrabarty
Ans: B

3. Robert Hooke published his observations in the book
A) Origin of Species B) Micrographia
C) Biology D) Cell Theory
Ans: B

4. Robert Hooke's microscope magnified objects approximately
A) 10–20 times B) 50–100 times
C) 200–300 times D) 500–600 times
Ans: C

5. Who is known as the Father of Microbiology?
A) Robert Hooke B) Antonie van Leeuwenhoek
C) Darwin D) Chakrabarty
Ans: B

6. Which of the following is not one of the three basic parts of a cell
A) Cell membrane B) Cytoplasm
C) Nucleus D) Chloroplast
Ans: D

7. Which cell structure regulates all activities occurring within the cell?
A) Cell wall B) Nucleus
C) Vacuole D) Cytoplasm
Ans: B

8. The cell membrane mainly
A) produces sunlight
B) encloses the cytoplasm and nucleus
C) gives green colour to plants
D) produces manure
Ans: B

9. Which structure provides rigidity and strength to plant cells?
A) Nucleus B) Cytoplasm
C) Cell wall D) Vacuole
Ans: C

10. Chlorophyll is present in
A) Chloroplasts B) Nucleus
C) Cell membrane D) Vacuoles
Ans: A

11. The main function of chlorophyll is associated with
A) digestion B) photosynthesis
C) movement D) waste removal
Ans: B

12. Which cell usually has a large vacuole?
A) Plant cell B) Animal cell
C) Bacterial cell D) Viral particle
Ans: A

13. A nerve cell is also called a
A) neuron B) plastid C) nodule D) microbe
Ans: A

14. Which type of cell carries messages in the human body?
A) Muscle cell B) Nerve cell
C) Onion cell D) Blood cell
Ans: B

15. The correct order of organisation is
A) Cell → Organ → Tissue → Organ system → Organism
B) Cell → Tissue → Organ → Organ system → Organism
C) Tissue → Cell → Organ → Organism → Organ system
D) Cell → Organ system → Tissue → Organ → Organism
Ans: B

16. A group of similar cells forms a
A) tissue B) organ C) system D) microorganism
Ans: A

17. Different tissues organised together form a
A) cell B) microorganism C) organ D) vacuole
Ans: C

18. Several organs working together form
A) a tissue B) an organ system
C) a cell D) a nucleus
Ans: B

19. The zygote develops into a multicellular organism mainly by
A) dissolving B) repeated cell division
C) evaporation D) fermentation
Ans: B

20. Which of the following is unicellular
A) Human B) Plant C) Amoeba D) Mould
Ans: C

21. Which pair contains only unicellular organisms?
A) Amoeba and bacteria B) Mould and human
C) Plant and Amoeba D) Mould and plant
Ans: A

22. Microorganisms are organisms that
A) can always be seen with naked eyes
B) cannot be seen with the naked eye because they are very small
C) are always harmful D) are always plants
Ans: B

23. Which instrument helps us observe microorganisms?
A) Telescope B) Microscope
C) Barometer D) Thermometer
Ans: B

24. A foldscope is
A) a high-powered telescope
B) a low-cost, foldable paper microscope
C) a type of bacteria D) a chemical stain
Ans: B

25. Which microorganism has an irregular shape and moves from place to place?
A) Amoeba B) Bread mould C) Algae D) Bacteria
Ans: A

26. Paramecium moves with the help of
A) chloroplasts B) specialised structures

C) cell wall D) vacuoles

Ans: B

27. Which organism appears green because of the presence of green pigment?

A) Amoeba B) Paramecium

C) Chlamydomonas D) Bread mould

Ans: C

28. Bread mould belongs to

A) Protozoa B) Fungi C) Bacteria D) Microalgae

Ans: B

29. Which microorganism has no chlorophyll and a branched filamentous structure?

A) Bread mould B) Chlamydomonas

C) Algae D) Amoeba

Ans: A

30. Viruses are described in the chapter as

A) multicellular and independent

B) microscopic and acellular

C) large multicellular organisms D) plant cells

Ans: B

31. A student observes an unknown organism under a microscope. It consists of a single cell and has an irregular shape. Which organism is the student most likely observing?

A) Amoeba B) Bread mould

C) Mould D) Plant cell

Ans: A

32. A student puts fruit and vegetable peels into soil and observes the container after 2–3 weeks. The waste has changed into a dark-coloured, nutrient-rich material. What caused this change?

A) Sunlight alone

B) Microorganisms such as fungi and bacteria

C) Only water D) Oxygen alone

Ans: B

33. Two students prepare dough. Bowl A contains yeast, while Bowl B does not. Both are kept in warm conditions. After a few hours, Bowl A has risen and become fluffy. What is the best explanation?

A) Yeast releases carbon dioxide during its life processes

B) Yeast absorbs all the water C) Yeast produces oxygen

D) Yeast changes into a plant

Ans: A

34. A student keeps two bowls of milk: Bowl A in a warm place and Bowl B in a refrigerator. Curd is formed in Bowl A but not in Bowl B. Which conclusion is best supported?

A) Bacteria do not need any suitable temperature

B) Lactobacillus grows well in warm conditions

C) Cold conditions increase fermentation

D) Milk cannot be converted into curd

Ans: B

35. A farmer grows beans, peas or lentils in rotation with other crops. How can this practice improve soil fertility?

A) Their leaves produce manure immediately

B) Rhizobium in root nodules helps make atmospheric nitrogen useful to plants

C) Their roots remove all microorganisms

D) They prevent photosynthesis

Ans: B

36. A student notices that fallen leaves disappear gradually from a garden. Which process best explains this observation?

A) Photosynthesis

B) Decomposition by microorganisms

C) Respiration by plants only D) Condensation

Ans: B

37. Consider the following statements:

1. Microorganisms occur in soil, water and air.
2. Some microorganisms live inside our bodies.
3. All microorganisms are harmful.
4. Some microorganisms help in decomposition.

Which statements are correct?

A) 1 and 2 only B) 1, 2 and 4 only

C) 2 and 3 only D) 1, 2, 3 and 4

Ans: B

38. A village uses microorganisms to treat plant and animal waste in an oxygen-free environment. The process produces a gas rich in methane that can be used for cooking. Which gas mixture is being referred to?

A) Biogas B) Oxygen C) Nitrogen D) Water vapour

Ans: A

39. Microalgae are important to aquatic ecosystems because they

A) consume all oxygen in water

B) make their own food and release oxygen

C) cannot perform photosynthesis

D) destroy all aquatic organisms

Ans: B

40. A scientist observes a microorganism whose cell has a cell membrane but lacks a well-defined nucleus and nuclear membrane. Instead, genetic material is present in a nucleoid region. Which organism is it most likely to be?

A) Bacterium B) Yeast

C) Protozoan D) Plant

Ans: A

41. A student observes the following in pond water

Observation	Characteristic
X	Single cell, irregular shape, moving
Y	Single cell, specialised structures for movement
Z	Single cell, green because of a green pigment

Which identification is most appropriate?

A) X–Amoeba, Y–Paramecium, Z–Chlamydomonas

B) X–Bacteria, Y–Fungi, Z–Virus

C) X–Fungi, Y–Amoeba, Z–Bacteria

D) X–Chlamydomonas, Y–Virus, Z–Amoeba

Ans: A

ASSERTION & REASON

1. Assertion (A): Green plants are called producers.
Reason (R): Green plants make their own food by photosynthesis.
A) Both A and R are true, and R is the correct explanation of A.
B) Both A and R are true, but R is not the correct explanation of A.
C) A is true, but R is false.
D) A is false, but R is true.
Ans: A

2. Assertion (A): Decomposers are important for maintaining soil nutrients.
Reason (R): Decomposers break down dead matter and return important nutrients to the soil.
A) Both A and R are true, and R is the correct explanation of A.
B) Both A and R are true, but R is not the correct explanation of A.
C) A is true, but R is false.
D) A is false, but R is true.
Ans: A

3. Assertion (A): A food web is more complex than a simple food chain.
Reason (R): Different food chains in an ecosystem can be interlinked.
A) Both A and R are true, and R is the correct explanation of A.
B) Both A and R are true, but R is not the correct explanation of A.
C) A is true, but R is false.
D) A is false, but R is true.
Ans: A

4. Assertion (A): Excessive use of natural resources can disturb ecosystem balance.
Reason (R): Human activities can alter interactions between organisms and their environment.
A) Both A and R are true, and R is the correct explanation of A.
B) Both A and R are true, but R is not the correct explanation of A.
C) A is true, but R is false.
D) A is false, but R is true.
Ans: A

5. Assertion (A): Orchids growing on trees are an example of parasitism.
Reason (R): In commensalism, one organism benefits while the other is not affected.
A) Both A and R are true, and R is the correct explanation of A.
B) Both A and R are true, but R is not the correct explanation of A.
C) A is true, but R is false.
D) A is false, but R is true.
Ans: D

MATCHING

1. Match the following:

Column–I	Column–II
1. Robert Hooke	a. Father of Microbiology
2. Antonie van Leeuwenhoek	b. Discovered the word "cell"
3. Cell membrane	c. Regulates cell activities
4. Nucleus	d. Allows entry and exit of materials

A) 1-b, 2-a, 3-d, 4-c B) 1-a, 2-b, 3-c, 4-d C) 1-b, 2-d, 3-a, 4-c D) 1-c, 2-a, 3-d, 4-b
Ans: A) 1-b, 2-a, 3-d, 4-c

2. Match the cell structure with its function:

Column–I	Column–II
1. Cell membrane	a. Photosynthesis
2. Nucleus	b. Storage and maintaining shape
3. Chloroplast	c. Regulates cell activities
4. Vacuole	d. Controls entry and exit of materials

A) 1-d, 2-c, 3-a, 4-b B) 1-c, 2-d, 3-b, 4-a C) 1-a, 2-b, 3-d, 4-c D) 1-b, 2-a, 3-c, 4-d
Ans: A) 1-d, 2-c, 3-a, 4-b

3. Match the organism with its correct category:

Column–I	Column–II
1. Amoeba	a. Algae
2. Chlamydomonas	b. Fungi
3. Bread mould	c. Protozoa
4. Bacteria	d. Bacteria

A) 1-c, 2-a, 3-b, 4-d B) 1-a, 2-c, 3-d, 4-b C) 1-b, 2-d, 3-a, 4-c D) 1-d, 2-b, 3-c, 4-a

Ans: A) 1-c, 2-a, 3-b, 4-d

4. Match the microorganism with its important role:

Column–I	Column–II
1. Yeast	a. Formation of curd
2. Lactobacillus	b. Nitrogen fixation
3. Rhizobium	c. Bread making
4. Microalgae	d. Oxygen production

A) 1-c, 2-a, 3-b, 4-d B) 1-a, 2-c, 3-d, 4-b C) 1-d, 2-b, 3-a, 4-c D) 1-b, 2-d, 3-c, 4-a

Ans: A) 1-c, 2-a, 3-b, 4-d

5. Match the levels of organisation:

Column–I	Column–II
1. Cell	a. Group of similar cells
2. Tissue	b. Basic unit of life
3. Organ	c. Several tissues organised together
4. Organ system	d. Several organs working together

A) 1-b, 2-a, 3-c, 4-d B) 1-a, 2-b, 3-d, 4-c C) 1-c, 2-d, 3-a, 4-b D) 1-d, 2-c, 3-b, 4-a

Ans: A) 1-b, 2-a, 3-c, 4-d

CHOOSE THE CORRECT / INCORRECT STATEMENT

6. Choose the CORRECT statement.

A) All microorganisms are multicellular. B) Bacteria and Amoeba are unicellular organisms.
C) Yeast is always multicellular. D) Microorganisms can be seen clearly with the naked eye.

Ans: B) Bacteria and Amoeba are unicellular organisms.

7. Choose the INCORRECT statement.

A) The nucleus regulates cell activities. B) Cytoplasm contains various components and compounds.
C) Cell membrane separates one cell from another. D) Cell wall is present in animal cells and provides rigidity to them.

Ans: D) Cell wall is present in animal cells and provides rigidity to them.

8. Choose the CORRECT statement.

A) Yeast belongs to bacteria. B) Yeast releases carbon dioxide during its activity in dough.
C) Yeast prevents dough from becoming fluffy. D) Yeast produces lactic acid to make curd.

Ans: B) Yeast releases carbon dioxide during its activity in dough.

9. Choose the INCORRECT statement.

A) *Rhizobium* lives in root nodules of certain legumes. B) *Rhizobium* helps make atmospheric nitrogen useful to plants.
C) Farmers can grow legumes in rotation to improve soil nitrogen. D) *Rhizobium* removes all nitrogen from the soil.

Ans: D) *Rhizobium* removes all nitrogen from the soil.

10. Choose the CORRECT statement.

A) Bacteria have a well-defined nucleus surrounded by a nuclear membrane.
B) Bacteria have a nucleoid instead of a well-defined nucleus.
C) Fungi have chloroplasts and make food by photosynthesis.
D) All microorganisms are made up of many cells.

Ans: B) Bacteria have a nucleoid instead of a well-defined nucleus.

Chapter: Health

8th CLASS

1. According to the WHO definition of health means
A) Absence of disease only B) Physical fitness only
C) Complete physical, mental and social well-being
D) Ability to work continuously
Ans: C

2. Which of the following is NOT included in the three major aspects of health?
A) Physical B) Mental C) Social D) Financial
Ans: D

3. Which is a healthy habit?
A) Skipping breakfast B) Eating junk food every day
C) Regular exercise D) Sleeping very late
Ans: C

4. Which of the following is recommended for maintaining a healthy lifestyle?
A) Excessive screen time B) Balanced diet
C) Lack of sleep
D) Regular consumption of sugary drinks
Ans: B

5. Which of the following can negatively affect health?
A) Regular exercise B) Adequate sleep
C) Excessive screen time D) Balanced diet
Ans: C

6. Ayurveda describes true health as a balance of
A) Food and exercise only
B) Body, mind and surroundings
C) Medicines and sleep
D) Physical strength and wealth
Ans: B

7. A person feels pain and tiredness. These are examples of
A) Signs B) Symptoms C) Pathogens D) Vectors
Ans: B

8. Which of the following is a sign of illness?
A) Pain B) Tiredness C) Dizziness D) Fever
Ans: D

9. Which of the following is a disease-causing organism?
A) Pathogen B) Nutrient C) Vaccine D) Antibody
Ans: A

10. Which group contains only pathogens mentioned?
A) Bacteria, viruses, fungi, worms and protozoa
B) Plants, animals and fungi
C) Vitamins, minerals and proteins
D) Water, air and soil
Ans: A

11. Which of the following is a communicable disease?
A) Diabetes B) Cancer
C) Typhoid D) High blood pressure
Ans: C

12. Which of the following is a non-communicable disease?
A) Dengue B) Chickenpox C) Diabetes D) Typhoid
Ans: C

13. Communicable diseases are caused by
A) Pathogens B) Lack of exercise only
C) Genetic factors only D) Nutrient excess only
Ans: A

14. Which disease is caused by bacteria?
A) Dengue B) Cholera C) Measles D) Hepatitis A
Ans: B

15. Which disease is caused by a protozoan?
A) Malaria B) Dengue C) Cholera D) Tuberculosis
Ans: A

16. Which disease is caused by a virus?
A) Tuberculosis B) Typhoid C) Dengue D) Cholera
Ans: C

17. Which disease is caused by worms?
A) Ascariasis B) Malaria C) Influenza D) Measles
Ans: A

18. Which disease primarily affects the lungs?
A) Cholera B) Tuberculosis
C) Typhoid D) Hepatitis A
Ans: B

19. Cholera mainly affects the
A) Lungs B) Liver C) Intestine D) Skin
Ans: C

20. Hepatitis A mainly affects the
A) Liver B) Lungs C) Heart D) Brain
Ans: A

21. Which disease can spread through contaminated food and water?
A) Cholera B) Dengue C) Malaria D) Influenza
Ans: A

22. Mosquitoes and houseflies that transmit pathogens are called
A) Parasites B) Vectors
C) Pathogens D) Decomposers
Ans: B

23. Malaria is transmitted by
A) Contaminated water B) Mosquitoes
C) Houseflies only D) Direct contact
Ans: B

24. Which is an appropriate preventive measure against malaria and dengue?
A) Sharing towels
B) Allowing stagnant water to collect
C) Controlling mosquito breeding
D) Avoiding exercise
Ans: C

25. Which of the following helps prevent diseases spread through contaminated water?
A) Drinking boiled water B) Sharing drinking bottles
C) Eating uncovered food D) Avoiding vegetables
Ans: A

26. Washing hands with soap and water helps
A) Increase pathogens B) Remove pathogens
C) Increase body temperature D) Cause dehydration
Ans: B

27. Which action helps prevent the spread of respiratory infections?

A) Covering the mouth and nose while coughing
B) Sharing personal items C) Avoiding hand washing
D) Drinking untreated water
Ans: A

28. Which of the following is a nutritional deficiency disease?
A) Scurvy B) Dengue C) Typhoid D) Malaria
Ans: A

29. Which of the following is a chronic disease?
A) Cancer B) Common cold
C) Chickenpox D) Influenza
Ans: A) Cancer

30. Non-communicable diseases are commonly linked with
A) Pathogens only
B) Lifestyle, diet and/or environment
C) Mosquitoes only D) Contaminated water only
Ans: B

31. Which combination is most suitable for preventing lifestyle-related diseases?
A) Junk food + no exercise
B) Balanced diet + regular exercise
C) Excessive screen time + less sleep
D) Skipping meals + inactivity
Ans: B

32. The natural ability of the body to fight diseases is called
A) Digestion B) Immunity
C) Respiration D) Nutrition
Ans: B

33. The system of the body that helps fight diseases is the
A) Digestive system B) Respiratory system
C) Immune system D) Skeletal system
Ans: C

34. Vaccines primarily help the body to
A) Digest food B) Recognise and fight harmful germs
C) Increase blood sugar
D) Cure every disease immediately
Ans: B

35. Vaccination provides
A) Acquired immunity B) Dehydration
C) Malnutrition D) Antibiotic resistance
Ans: A

36. Who is associated with the discovery of the first vaccine against smallpox?
A) Alexander Fleming B) Edward Jenner
C) Yellapragada Subba Rao D) Kamal Ranadive
Ans: B) Edward Jenner

37. Edward Jenner observed that people who had cowpox
A) Always developed smallpox
B) Did not get smallpox C) Developed malaria
D) Became infected with tuberculosis
Ans: B) Did not get smallpox

38. Antibiotics are effective mainly against
A) Bacterial infections B) Viral infections
C) All diseases D) Nutritional deficiencies
Ans: A

39. Penicillin was discovered by
A) Edward Jenner B) Alexander Fleming
C) Dr. Maharaj Kishan Bhan D) Dr. Kamal Ranadive
Ans: B

40. The scientist from Andhra Pradesh associated with the discovery of tetracycline was
A) Edward Jenner B) Alexander Fleming
C) Yellapragada Subba Rao D) Maharaj Kishan Bhan
Ans: C

Assertion – Reason Questions

1. Assertion (A): Health is more than simply the absence of disease.
Reason (R): Health includes physical, mental and social well-being.
A) Both A and R are true, and R is the correct explanation of A.
B) Both A and R are true, but R is not the correct explanation of A.
C) A is true, but R is false.
D) A is false, but R is true.
Ans: A

2. Assertion (A): Diabetes is a non-communicable disease.
Reason (R): Diabetes is caused by pathogens and spreads from one person to another.
A) Both A and R are true, and R is the correct explanation of A.
B) Both A and R are true, but R is not the correct explanation of A.
C) A is true, but R is false.
D) A is false, but R is true.
Ans: C

3. Assertion (A): Vaccines can help prevent serious infectious diseases.
Reason (R): Vaccines train the immune system to recognise and fight harmful germs.
A) Both A and R are true, and R is the correct explanation of A.
B) Both A and R are true, but R is not the correct explanation of A.
C) A is true, but R is false.
D) A is false, but R is true.

Ans: A

4. Assertion (A): Antibiotics should not be used unnecessarily.
Reason (R): Indiscriminate use of antibiotics can contribute to antibiotic resistance.
A) Both A and R are true, and R is the correct explanation of A.
B) Both A and R are true, but R is not the correct explanation of A.
C) A is true, but R is false.
D) A is false, but R is true.

Ans: A

5. Assertion (A): Antibiotics are effective against viral diseases.
Reason (R): Antibiotics target structures of bacterial cells.
A) Both A and R are true, and R is the correct explanation of A.
B) Both A and R are true, but R is not the correct explanation of A.
C) A is true, but R is false.
D) A is false, but R is true.

Ans: D

Matching

1. Match the disease with its causal agent.

Column–I	Column–II
1. Tuberculosis	a. Protozoa
2. Malaria	b. Virus
3. Cholera	c. Bacteria
4. Ascariasis	d. Worms
5. Dengue	e. Virus

A) 1-a, 2-c, 3-b, 4-d, 5-c B) 1-c, 2-a, 3-c, 4-d, 5-b C) 1-c, 2-b, 3-a, 4-d, 5-b D) 1-d, 2-a, 3-c, 4-b, 5-e

Ans: B

2. Match the disease with its main site of infection.

Column–I	Column–II
1. Tuberculosis	a. Liver
2. Hepatitis A	b. Intestine
3. Cholera	c. Lungs
4. Malaria	d. Skin and blood

A) 1-c, 2-b, 3-a, 4-d B) 1-a, 2-c, 3-d, 4-b C) 1-b, 2-a, 3-c, 4-d D) 1-c, 2-a, 3-b, 4-d

Ans: D

3. Match the scientist with the contribution.

Column–I	Column–II
1. Edward Jenner	a. Penicillin
2. Alexander Fleming	b. Tetracycline
3. Yellapragada Subba Rao	c. Smallpox vaccine
4. Maharaj Kishan Bhan	d. Rotavirus vaccine

A) 1-c, 2-a, 3-b, 4-d B) 1-a, 2-c, 3-d, 4-b C) 1-b, 2-a, 3-c, 4-d D) 1-d, 2-b, 3-a, 4-c

Ans: A

4. Match the term with its meaning.

Column–I	Column–II
1. Pathogen	a. Natural ability to fight diseases
2. Vector	b. Disease-causing organism
3. Immunity	c. Organism that transmits pathogens
4. Symptom	d. What a person feels

A) 1-b, 2-a, 3-c, 4-d B) 1-c, 2-b, 3-d, 4-a C) 1-b, 2-c, 3-a, 4-d D) 1-d, 2-c, 3-a, 4-b

Ans: C

5. Match the disease with its preventive measure.

Column–I	Column–II
1. Malaria	a. Boiled water
2. Cholera	b. Mosquito breeding control
3. Chickenpox	c. Isolation and vaccination
4. Common cold	d. Hand washing and avoiding sharing personal items

A) 1-b, 2-a, 3-c, 4-d B) 1-a, 2-b, 3-d, 4-c C) 1-c, 2-a, 3-b, 4-d D) 1-b, 2-c, 3-a, 4-d

Ans: A

Choose the Correct or Incorrect Sentence/Statement

1. Choose the CORRECT statement.

A) Health means only absence of disease.
B) Health includes physical, mental and social well-being.
C) Mental health has no connection with physical health.
D) Social relationships have no role in health.

Ans: B

2. Choose the INCORRECT statement.

A) Tuberculosis is caused by bacteria.
B) Malaria is caused by protozoa.
C) Dengue is caused by a virus.
D) Cholera is caused by a virus.

Ans: D

3. Choose the CORRECT statement.

A) Antibiotics can cure all viral infections.
B) Vaccines are mainly used as preventive measures.
C) Antibiotic resistance makes bacterial infections easier to treat.
D) Antibiotics should always be taken without medical advice.

Ans: B

4. Choose the INCORRECT statement.

A) Mosquitoes can act as vectors.
B) Washing hands helps remove pathogens.
C) Contaminated food and water can spread some communicable diseases.
D) Communicable diseases never spread through air.

Ans: D

5. Choose the CORRECT statement.

A) Edward Jenner is associated with the smallpox vaccine.
B) Alexander Fleming discovered the smallpox vaccine.
C) Yellapragada Subba Rao discovered penicillin.
D) Vaccines are used only after a person becomes sick.

Ans: A

Chapter: Nature's Harmony 8th CLASS

1. A place where an organism lives is called
A) Community B) Habitat
C) Population D) Ecosystem
Ans: B) Habitat

2. Which of the following is a biotic component?
A) Water B) Soil C) Fish D) Sunlight
Ans: C) Fish

3. Which one is an abiotic component of an ecosystem?
A) Grass B) Bird C) Water D) Fish
Ans: C) Water

4. The living components of a habitat are called
A) Abiotic components B) Biotic components
C) Physical components D) Climatic components
Ans: B) Biotic components

5. Which of the following is NOT an abiotic component?
A) Air B) Temperature C) Soil D) Grass
Ans: D) Grass

6. A group of organisms of the same type living together in a habitat is called
A) Community B) Population
C) Ecosystem D) Biosphere
Ans: B) Population

7. Different populations sharing the same habitat form a
A) Species B) Population
C) Community D) Trophic level
Ans: C) Community

8. Which of the following is an example of a nocturnal animal?
A) Cow B) Bat C) Deer D) Horse
Ans: B) Bat

9. Animals that are active during the night are called
A) Aquatic animals B) Diurnal animals
C) Nocturnals D) Herbivores
Ans: C) Nocturnals

10. The transfer of pollen from stamens to carpels is called
A) Fertilisation B) Germination
C) Pollination D) Respiration
Ans: C) Pollination

11. Which interaction is represented by "A frog eats insects"?
A) Abiotic–abiotic B) Biotic–abiotic
C) Biotic–biotic D) Non-living–non-living
Ans: C) Biotic–biotic

12. Which of the following is an aquatic ecosystem?
A) Forest B) Grassland C) Pond D) Farmland
Ans: C) Pond

13. Which of the following is a terrestrial ecosystem?
A) Pond B) River C) Lake D) Forest
Ans: D) Forest

14. Farmland is an example of
A) Natural ecosystem only B) Human-made ecosystem
C) Aquatic ecosystem D) Marine ecosystem
Ans: B) Human-made ecosystem

15. Green plants are called producers because they
A) Eat animals B) Decompose dead matter
C) Make their own food
D) Depend on other organisms for food
Ans: C) Make their own food

16. Organisms that cannot make their own food are called
A) Producers B) Autotrophs C) Consumers D) Plants
Ans: C) Consumers

17. The term "autotroph" means
A) Other food B) Self-food
C) Animal food D) Dead food
Ans: B) Self-food

18. Which one is a herbivore?
A) Leopard B) Deer C) Tiger D) Eagle
Ans: B) Deer

19. Which one is a carnivore?
A) Deer B) Cow C) Leopard D) Grasshopper
Ans: C) Leopard

20. An organism that eats both plants and animals is called
A) Herbivore B) Carnivore
C) Omnivore D) Producer
Ans: C) Omnivore

21. Which of the following represents a food chain?
A) Grass → Grasshopper → Frog → Snake → Eagle
B) Eagle → Snake → Frog → Grasshopper
C) Frog → Grass → Eagle → Snake
D) Grasshopper → Grass → Frog → Eagle
Ans: A) Grass → Grasshopper → Frog → Snake → Eagle

22. A food chain represents
A) Who lives where B) Who eats whom
C) How organisms reproduce D) How organisms migrate
Ans: B) Who eats whom

23. Producers occupy which trophic level?
A) First B) Second C) Third D) Fourth
Ans: A) First

24. Herbivores generally occupy the
A) First trophic level B) Second trophic level
C) Third trophic level D) Fourth trophic level
Ans: B) Second trophic level

25. Small carnivores such as frogs occupy the
A) First trophic level B) Second trophic level
C) Third trophic level D) Fourth trophic level
Ans: C) Third trophic level

26. Interlinked food chains form a
A) Population B) Food web
C) Habitat D) Pyramid
Ans: B) Food web

27. Which organisms break down complex substances in dead plants and animals?
A) Producers B) Herbivores
C) Decomposers D) Carnivores
Ans: C) Decomposers

28. Fungi and bacteria are important examples of
A) Producers B) Decomposers

C) Herbivores D) Carnivores

Ans: B) Decomposers

29. The process by which dead matter is broken down into simpler substances is called

A) Photosynthesis B) Pollination

C) Decomposition D) Respiration

Ans: C) Decomposition

30. Decomposition helps in

A) Stopping nutrient cycling B) Recycling nutrients

C) Destroying soil D) Preventing plant growth

Ans: B) Recycling nutrients

31. Fish eat

A) Dragonfly larvae B) Bees

C) Butterflies D) Flowers

Ans: A) Dragonfly larvae

32. If fish are present in a pond, the number of dragonflies may decrease because

A) Fish eat adult dragonflies

B) Fish eat dragonfly larvae

C) Dragonflies eat fish D) Fish destroy flowers

Ans: B) Fish eat dragonfly larvae

33. Fewer dragonflies may result in more bees and butterflies because

A) Dragonflies eat bees and butterflies

B) Fish eat bees

C) Bees eat dragonflies D) Butterflies eat fish

Ans: A) Dragonflies eat bees and butterflies

34. Which relationship benefits both organisms?

A) Parasitism B) Commensalism

C) Mutualism D) Competition

Ans: C) Mutualism

35. Honeybees and flowers are an example of

A) Parasitism B) Mutualism

C) Competition D) Predation

Ans: B) Mutualism

36. Orchids growing on trees represent

A) Mutualism B) Parasitism

C) Commensalism D) Competition

Ans: C) Commensalism

37. Ticks living on dogs are an example of

A) Mutualism B) Commensalism

C) Parasitism D) Competition

Ans: C) Parasitism

38. Which activity can disturb the balance of an ecosystem?

A) Recycling nutrients

B) Excessive use of natural resources

C) Pollination D) Decomposition

Ans: B) Excessive use of natural resources

39. The Sundarbans are famous for their

A) Desert ecosystem B) Mangrove forests

C) Grasslands D) Coniferous forests

Ans: B) Mangrove forests

40. Which of the following is a protected area in Andhra Pradesh mentioned in the chapter?

A) Sri Venkateswara National Park

B) Gir National Park C) Kaziranga National Park

D) Jim Corbett National Park

Ans: A) Sri Venkateswara National Park

Assertion – Reason Questions

1. Assertion (A): Green plants are called producers.

Reason (R): Green plants make their own food by photosynthesis.

A) Both A and R are true, and R is the correct explanation of A.

B) Both A and R are true, but R is not the correct explanation of A.

C) A is true, but R is false.

D) A is false, but R is true.

Ans: A

2. Assertion (A): Decomposers are important for maintaining soil nutrients.

Reason (R): Decomposers break down dead matter and return important nutrients to the soil.

A) Both A and R are true, and R is the correct explanation of A.

B) Both A and R are true, but R is not the correct explanation of A.

C) A is true, but R is false.

D) A is false, but R is true.

Ans: A

3. Assertion (A): A food web is more complex than a simple food chain.

Reason (R): Different food chains in an ecosystem can be interlinked.

A) Both A and R are true, and R is the correct explanation of A.

B) Both A and R are true, but R is not the correct explanation of A.

C) A is true, but R is false.

D) A is false, but R is true.

Ans: A

4. Assertion (A): Excessive use of natural resources can disturb ecosystem balance.

Reason (R): Human activities can alter interactions between organisms and their environment.

A) Both A and R are true, and R is the correct explanation of A.
B) Both A and R are true, but R is not the correct explanation of A.
C) A is true, but R is false.
D) A is false, but R is true.

Ans: A

5. Assertion (A): Orchids growing on trees are an example of parasitism.
Reason (R): In commensalism, one organism benefits while the other is not affected.

A) Both A and R are true, and R is the correct explanation of A.
B) Both A and R are true, but R is not the correct explanation of A.
C) A is true, but R is false.
D) A is false, but R is true.

Ans: D

Matching

1. Match the following

Column–I	Column–II
1. Producer	a. Deer
2. Herbivore	b. Leopard
3. Carnivore	c. Green plant
4. Omnivore	d. Fox
5. Decomposer	e. Fungi

Which option gives the correct matching?

A) 1-a, 2-c, 3-d, 4-b, 5-e B) 1-c, 2-a, 3-b, 4-d, 5-e C) 1-c, 2-b, 3-a, 4-d, 5-e D) 1-d, 2-a, 3-b, 4-c, 5-e

Ans: B

2. Match the interaction with its example

Column–I	Column–II
1. Mutualism	a. Ticks–Dog
2. Commensalism	b. Honeybee–Flower
3. Parasitism	c. Orchid–Tree
4. Competition	d. Frogs–Fish for insects

A) 1-b, 2-c, 3-a, 4-d B) 1-a, 2-b, 3-c, 4-d C) 1-c, 2-a, 3-b, 4-d D) 1-d, 2-c, 3-a, 4-b

Ans: A

3. Match the term with its meaning

Column–I	Column–II
1. Habitat	a. Group of same type of organisms
2. Population	b. Place where an organism lives
3. Community	c. Interlinked food chains
4. Food web	d. Different populations sharing habitat

A) 1-a, 2-b, 3-c, 4-d B) 1-b, 2-a, 3-d, 4-c C) 1-d, 2-a, 3-b, 4-c D) 1-b, 2-d, 3-a, 4-c

Ans: B

4. Match the trophic level

Column–I	Column–II
1. First trophic level	a. Herbivores
2. Second trophic level	b. Small carnivores
3. Third trophic level	c. Producers
4. Next higher level	d. Large carnivores

A) 1-d, 2-a, 3-b, 4-c B) 1-a, 2-b, 3-c, 4-d C) 1-c, 2-b, 3-a, 4-d D) 1-c, 2-a, 3-b, 4-d

Ans: D

5. Match the ecosystem/component

Column–I	Column–II
1. Pond	a. Terrestrial ecosystem
2. Forest	b. Aquatic ecosystem
3. Farmland	c. Human-made ecosystem
4. Water	d. Abiotic component

A) 1-b, 2-c, 3-a, 4-d B) 1-a, 2-b, 3-d, 4-c C) 1-c, 2-a, 3-b, 4-d D) 1-b, 2-a, 3-c, 4-d

Ans: D

Choose the Correct or Incorrect Sentence/Statement

1. Choose the CORRECT statement.

A) Abiotic components are living organisms.
B) Fish are abiotic components of a pond.
C) Water, soil and sunlight are abiotic components.
D) Plants are abiotic components.

Ans: C

2. Choose the INCORRECT statement.

A) Producers make their own food.
B) Herbivores eat plants.
C) Carnivores eat only plants.
D) Omnivores eat both plants and animals.

Ans: C

3. Choose the CORRECT statement.

A) Food chains are never connected to one another.
B) Interlinked food chains form a food web.
C) A food web contains only producers.
D) A food chain does not show feeding relationships.

Ans: B

4. Choose the INCORRECT statement.

A) Mutualism benefits both organisms.
B) In commensalism, one organism benefits and the other is not affected.
C) In parasitism, one organism benefits and the other is harmed.
D) In mutualism, one organism benefits and the other is harmed.

Ans: D

5. Choose the CORRECT statement.

A) Decomposers prevent nutrient recycling.
B) Fungi and bacteria can act as decomposers.
C) Decomposers are always large animals.
D) Decomposition stops nutrients from returning to soil.

Ans: B

Chapter: Nutrition in Plants

7th CLASS

1. Which of the following is a nutrient?
(a) Protein (b) Fat
(c) Vitamin (d) All of these
Ans: (d) All of these

2. Human beings can be categorised as
(a) heterotrophs (b) autotrophs
(c) parasites (d) saprotrophs
Ans: (a) heterotrophs

3. The food making process in plants is called as
(a) glycolysis (b) photosynthesis
(c) photolysis (d) chemosynthesis
Ans: (b) photosynthesis

4.Which part of the plant is called its food factory?
(a) Fruits (b) Seeds (c) Leaves (d) Flowers
Ans: (c) Leaves

5. Tiny pores present on the surface of leaves through which gaseous exchange occurs are called
(a) stomata (b) guard cells
(c) food holes (d) gas holes
Ans: (a) stomata

6. What is the ultimate source of energy for all living organisms?
(a) Water energy (b) Wind energy
(c) Solar energy (d) Chemical energy
Ans: (c) Solar energy

7. Green pigment present in the leaves is called
(a) haemoglobin (b) globulin
(c) albumin (d) chlorophyll
Ans: (d) chlorophyll

8. During photosynthesis
(a) solar energy is converted into chemical energy
(b) solar energy is converted into mechanical energy
(c) chemical energy is converted into mechanical energy
(d) bioenergy is converted into chemical energy
Ans: (a) solar energy is converted into chemical energy

9. The raw materials for photosynthesis are
(a) CO_2 (b) CO_2, O_2, H_2
(c) N_2 water (d) O_2 water
Ans: (a) CO_2

10. Which one of the following is a parasite?
(a) Lichen (b) Cuscuta
(c) Pitcher plant (d) Rhizobium
Ans: (b) Cuscuta

11. Which of the following class of organisms belongs to saprotrophs?
(a) Fungi (b) Algae (c) Lichens (d) Bryophytes
Ans: (a) Fungi

12. Which of the following is an insectivorous plant?
(a) Pitcher plant (b) Indian telegraph plant
(c) 4 'O'clock plant (d) Cuscuta
Ans: (a) Pitcher plant

13. The bacterium which provides nitrogen to the leguminous plants is
(a) Rhizobium (b) Yeast (c) Fungi (d) Lichens
Ans: (a) Rhizobium

14. _____ gas is released by the plants in the process of Photosynthesis
(a) Oxygen (b) Carbon dioxide
(c) Nitrogen (d) Hydrogen
Ans: (a) Oxygen

15. Which of the following is true about saprophytes?
(a) They trap insects to meet their nitrogen requirement.
(b) They live on decaying organic matter
(c) They share their food and shelter
(d) Saprophytes contain chlorophyll.
Ans: (b) They live on decaying organic matter

16. Iodine used to detect presence of starch. It gives starch
(a) blue-black colour (b) red colour
(c) green colour (d) colourless appearance
Ans: (a) blue-black colour

17. Which one of the following is an autotroph?
(a) Lichens (b) Algae (c) Fungus (d) Cuscuta
Ans: (b) Algae

18. Pitcher plant traps insects because it
(a) is a heterotroph
(b) grows in soils which lacks nitrogen
(c) does not have chlorophyll
(d) has a digestive system like human beings
Ans: (b) grows in soils which lacks nitrogen

19. Yeast, mushroom and bread-mould are
(a) autotrophic (b) insectivorous
(c) saprophytic (d) parasitic
Ans: (c) saprophytic

20. When two organisms are good friends and live together and they benefit each other. Such an association of organisms is termed as
(a) saprophyte (b) parasite
(c) autotroph (d) symbiosis
Ans: (d) symbiosis

21. The organisms that provides nutrients to parasitic organisms are known as …
(a) hosts (b) parasite
(c) autotroph (d) heterotrophs
Ans: (a) hosts

22. Chlorophyll is present inside the
(a) Stroma (b) Thylakoids
(c) hypodermis (d) granna
Ans: (b) Thylakoids

23. Plants take carbon dioxide from the atmosphere mainly through their:
(a) Roots (b) Stem (c) Flowers (d) Leaves
Ans: (d) Leaves

24. Which structure in a green plant controls the opening and closing of stomata?
(a) Guard cell (b) Mesophyll
(c) Phloem (d) Xylem

Ans: (a) Guard cell

25. Most of the pulses are obtained from _ plants?

(a) Leguminous (b) Cuscuta
(c) Maize (d) Xylem

Ans: (a) Leguminous

26. Leaves are the food factories of plant". But, how does cactus (desert plants) carry out photosynthesis?

(a) Roots (b) Spines (c) Stems (d) Green leaves

Ans: (c) Stems

27. Two organisms are good friends and live together. One provides shelter, water and nutrients while the other three prepares and provides food. Such an association of organisms is termed as: saprophyte parasite autotrophs Symbiosis

(a) Saprophyte (b) Parasite
(c) Autotrophs (d) Symbiosis

Ans: (d) Symbiosis

28. Food is essential for all living organisms because

(a) It provides energy
(b) It helps in growth and repair cells
(c) It protects our body from various diseases
(d) All of these

Ans: (d) All of these

29. A plant that has both autotrophic and heterotrophic mode of nutrition

(a) Sundari plant (b) Rhizobium
(c) Amarbel (d) Pitcher plant

Ans: (d) Pitcher plant

30. A parasitic plant with yellow, slender and tubular stem

(a) Cuscuta (b) Pitcher plant
(c) Golden roads (d) All the above

Ans: (a) Cuscuta

31. In non-green plants and animals, their mode of nutrition is

(a) Saprophytic (b)Parasitic
(c) Heterotrophic (d) Autotrophic

Ans: (c) Heterotrophic

32. The term that is used for the mode of nutrition in yeast, mushrooms and bread mould is: autotrophic insectivorous saprophytic parasitic

(a) Autotrophic (b) Insectivorous
(c) Saprophytic (d) Parasitic

Ans: (c) Saprophytic

Assertion – Reason Questions

1.Assertion (A): Green plants prepare their own food using sunlight, water, and carbon dioxide.
Reason (R): The green pigment chlorophyll absorbs sunlight, which helps in the synthesis of food.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true

Ans: a) Both A and R are true, and R is the correct explanation of A

2. Assertion (A): Mushrooms obtain their nutrition from dead and decaying matter.
Reason (R): They secrete digestive juices on dead matter and absorb the dissolved nutrients.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true

Ans: a) Both A and R are true, and R is the correct explanation of A

3. Assertion (A): Lichens are an example of symbiotic association between algae and fungi.
Reason (R): The algae in lichens supply water and minerals to fungi.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true

Ans: c) A is true, R is false

4. Assertion (A): Rhizobium bacteria live in the root nodules of leguminous plants.
Reason (R): They fix atmospheric nitrogen into soluble forms for plants.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true

Ans: a) Both A and R are true, and R is the correct explanation of A

5. Assertion (A): Insectivorous plants like pitcher plants trap insects to obtain nitrogen.
Reason (R): They grow in soils deficient in nitrogenous compounds.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true

Ans: a) Both A and R are true, and R is the correct explanation of A

Matching

1. Which of the following pairs are correctly matched?

List I	List II
(i) Chlorophyll	Green pigment in leaves
(ii) Stomata	Pores for exchange of gases
(iii) Rhizobium	Fixes nitrogen in legume roots
(iv) Pitcher plant	Parasitic plant

Choose the correct option

a) (i), (ii), (iii) only b) (i) & (iv) only c) (ii) & (iv) only d) All (i–iv)

Ans: a) (i), (ii), (iii) only

2. Identifying Symbiotic Pairs

Choose the **pair that shows symbiotic association**:

a) Algae – Fungus b) Pitcher plant – Insect c) Dodder – Host plant d) Mushroom – Bread

Ans: a) Algae – Fungus

3. Plants & Their Modes of Nutrition

Find the correct set:

Plant	Mode of Nutrition
(i) Mushroom	Saprotrophic
(ii) Cuscuta	Parasitic
(iii) Rhizobium	Symbiotic
(iv) Green algae	Heterotrophic

a) (i), (ii), (iii) only b) (i), (ii), (iv) c) All (i–iv) d) (i) & (iii) only

Ans: a) (i), (ii), (iii) only

4. Process–Requirement Pairs

Match the process with its requirement:

Process	Requirement
(i) Photosynthesis	Sunlight, CO_2, water, chlorophyll
(ii) Nitrogen fixation	Rhizobium in root nodules
(iii) Saprotrophic nutrition	Dead & decaying matter
(iv) Starch test	Copper sulphate solution

a) (i), (ii), (iii) only b) All (i–iv) c) (i), (iii), (iv) d) (ii) & (iii) only

Ans: a) (i), (ii), (iii) only

5. Leaf Experiment Pairs

Select the **correctly matched experimental pairs**:

Step	Purpose
(i) Boiling leaf in alcohol	Remove chlorophyll
(ii) Dipping in iodine solution	Test for starch
(iii) Keeping leaf in dark	To remove stored starch
(iv) Washing leaf with water	Test for oxygen

a) (i), (ii), (iii) only b) (i) & (iv) only c) All (i–iv) d) (ii) & (iii) only

Ans: a) (i), (ii), (iii) only

Choose the Correct or Incorrect Sentence/Statement

1. Which of the following statements are correct?

a) Photosynthesis takes place in the chloroplasts of green leaves.

b) Chlorophyll and sunlight are essential for photosynthesis.

c) Oxygen is produced during photosynthesis.

d) Carbon dioxide is released during photosynthesis.

A) a, b and c B) a, c and d C) b, c and d D) a, b, c and d

Ans: A) a, b and c

2. Identify the incorrect statement.

a) Autotrophs make their own food using sunlight.

b) Heterotrophs depend on other organisms for food.

c) Saprotrophs prepare their own food using inorganic substances.

d) Insectivorous plants trap insects to obtain nitrogen.

A) Only c B) a and c C) b and c D) a and d

Ans: A) Only c

3. Which of the following are correct **about symbiosis?**

a) Lichens are an example of symbiosis between algae and fungi.
b) Rhizobium bacteria live in root nodules of legumes and fix nitrogen.
c) Symbiosis always harms one partner. d) Some fungi provide nutrients to plants in exchange for sugars.

A) a, b and d B) b, c and d C) a and c D) a, b, c and d

Ans: A) a, b and d

4. Choose the correct **statements.**

a) Carbon dioxide, water, chlorophyll, and sunlight are necessary for photosynthesis.
b) Stomata help in exchange of gases during photosynthesis.
c) Photosynthesis results in the production of glucose and oxygen.
d) Plants obtain nitrogen directly through photosynthesis.

A) a, b and c B) a and d C) b, c and d D) a, b, c and d

Ans: A) a, b and c

5. Find the incorrect **statement about parasitic plants.**

a) Parasitic plants take food from host plants. b) Cuscuta (Amarbel) is a total parasite.
c) Partial parasites like mistletoe can prepare some of their own food.
d) Parasites increase the food supply of the host plant.

A) Only d B) b and d C) a and c D) c and d

Ans: 1) Only d

Chapter: Nutrition in Animals

7th CLASS

1. Bile is produced in
(a) Gall bladder (b) Blood (c) Liver (d) Spleen
Ans: (c) Liver

2. Cud is the name given to the food of ruminants which is
(a) swallowed and undigested
(b) swallowed and partially digested
(c) properly chewed and partially digested
(d) properly chewed and completely digested
Ans: (b) swallowed and partially digested

3. The false feet of Amoeba are used for:
(a) movement only (b) capture of food only
(c) capture of food and movement
(d) exchange of gases only
Ans: (c) capture of food and movement

4. The finger-like outgrowths of Amoeba helps to ingest food. However, the finger-like outgrowths of human intestine helps to:
(a) digest the fatty food substances
(b) make the food soluble
(c) absorb the digested food
(d) absorb the undigested food
Ans: (c) absorb the digested food

5. The main function of the lacteals of intestine is the absorption of
(a) amino acids (b) glucose and vitamins
(c) lactic acid (d) fatty acids and glycerol
Ans: (d) fatty acids and glycerol

6. Which is not digested by human?
(a) Protein (b) Fats (c) Glucose (d) Cellulose
Ans: (d) Cellulose

7. The number of incisors, molars, premolars and canines in the buccal cavity is
(a) 8, 4, 8, 8 (b) 8, 4, 8, 4
(c) 4, 8, 8, 8 (d) 8, 8, 8, 4
Ans: (d) 8, 8, 8, 4

8. Which of the following pair of teeth differ in structure but are similar in function?
(a) canines and incisors (b) molars and premolars
(c) incisors and molars (d) premolars and canines
Ans: (b) molars and premolars

9. Read carefully the terms given below. Which of the following set is the correct combination of organs that do not carry out any digestive functions?
(a) Oesophagus, Large Intestine, Rectum
(b) Buccal Cavity, Oesophagus, Rectum
(c) Buccal Cavity, Oesophagus, Large Intestine
(d) Small Intestine, Large Intestine, Rectum
Ans: (a) Oesophagus, Large Intestine, Rectum

10. The swallowed food moves downwards in the alimentary canal because of
(a) Force provided by the muscular tongue
(b) The flow of water taken with the food
(c) Gravitational pull
(d) The contraction of muscles in the wall of food pipe
Ans: (d) The contraction of muscles in the wall of food pipe

11. The acid present in the stomach:
(a) kills the harmful bacterial that may enter along with the food
(b) protects the stomach lining from harmful substances
(c) digests starch into simpler sugars
(d) makes the medium alkaline
Ans: (a) kills the harmful bacterial that may enter along with the food

12. The enzymes predsent in the saliva convert:
(a) fats into fatty acids and glycerol
(b) starch into simple sugars
(c) proteins into amino acids
(d) complex sugars into simple sugars
Ans: (b) starch into simple sugars

13. The semi-solid mass which is produced after thoroughly mix up of food and gastric juice is called
(a) bolus (b) chyme (c) bile (d) villus
Ans: (b) chyme

14. Which of the following is not a part of digestive system?
(a) Mouth cavity (b) Stomach
(c) Food pipe (d) Wind pipe
Ans: (d) Wind pipe

15. Salivary glands are located in
(a) mouth (b) liver
(c) stomach (d) large intestine
Ans: (a) mouth

16. Peristaltic movements found in different parts of alimentary canal. In which one of these there is least peristalsis?
(a) Stomach (b) Duodenum
(c) Rectum (d) Oesophagus
Ans: (c) Rectum

17. Duodenum, Jejunum, ileum are _____ parts.
(a) Small Intestine (b) Large Intestine
(c) Esophaguss (d) Stomach
Ans: (a) Small Intestine

18. The process through which undigested food is expelled out of the body is called
(a) digestion (b) absorption
(c) assimilation (d) egestion
Ans: (d) egestion

19. Humans cannot digest cellulose whereas cows can do so because

21. What is Tooth decay?
(a) Acids released by bacteria damages the teeth
(b) Acids release by bacteria produces the teeth
(c) Acids released by gums damages the teeth
(d) Acids released by gums hold the teeth
Ans: (a) Acids released by bacteria damages the teeth

22. Base of tongue is sensitive to taste
(a) Salty (b) Sweet (c) Bitter (d) Sour
Ans: (c) Bitter

23. Which of the following animals swallow its prey?
(a) Human beings (b) Snakes

(a) Their gut contains certain bacteria capable of digesting cellulose
(b) They have a many-chambered stomach
(c) They have efficient grinding molars
(d) They produce an enzyme cellulase which can digest cellulose

Ans: (a) Their gut contains certain bacteria capable of digesting cellulose

20. Siphoning is the mode of feeding alone in which type of animal.

(a) Humming bird (b) Butterfly
(c) Ant (d) Housefly

Ans: (b) Butterfly

(c) Humming birds (d) Ant

Ans: (b) Snakes

24. The teeth of first set fall off at the age between

(a) 10 – 20 (b) 6 – 8 (c) 9 – 1 (d) 0 – 2

Ans: (b) 6 – 8

25. Gastric digestion takes place efficiently in

(a) acidic medium (b) alkaline medium
(c) neutral medium (d) highly alkaline medium

Ans: (a) acidic medium

Assertion – Reason Questions

1. Assertion (A): The stomach releases hydrochloric acid during digestion.
Reason (R): Hydrochloric acid kills harmful bacteria and activates pepsin enzyme for protein digestion.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true

Ans: a) Both A and R are true, and R is the correct explanation of A

2. Assertion (A): Most digestion and absorption of food take place in the small intestine.
Reason (R): The inner walls of the small intestine have finger-like projections called villi, which increase the surface area for absorption.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true

Ans: a) Both A and R are true, and R is the correct explanation of A

3. Assertion (A): Ruminants like cows and buffaloes chew cud to help in digestion.
Reason (R): Cellulose in grass is hard to digest and is broken down by microorganisms in the rumen.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true

Ans: a) Both A and R are true, and R is the correct explanation of A

4. Assertion (A): Saliva is secreted in the mouth and plays a role in digestion.
Reason (R): Saliva contains bile, which helps in digesting fats.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true

Ans: c) A is true, R is false

5. Assertion (A): The large intestine absorbs water and salts from undigested food.
Reason (R): The main function of the large intestine is to digest proteins into amino acids.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true

Ans: c) A is true, R is false

Matching

1. Organs & Functions

Which of the following **pairs are correctly matched**?

Organ	Function
(i) Salivary glands	Secrete saliva containing amylase
(ii) Stomach	Mixes food & secretes gastric juice
(iii) Small intestine	Absorbs digested food
(iv) Large intestine	Absorbs fats only

a) (i), (ii), (iii) only b) (ii), (iv) only c) All (i–iv) d) (i) & (iv) only

Ans: a) (i), (ii), (iii) only

2. Enzymes & Their Actions

Find the correctly matched **enzyme–function pairs**:

Enzyme	Action
(i) Salivary amylase	Breaks starch into sugars
(ii) Pepsin	Digests proteins in stomach
(iii) Bile juice	Breaks fats into simpler substances
(iv) Trypsin	Digests starch

a) (i), (ii), (iii) only b) (i), (iv) only c) All (i–iv) d) (ii) & (iii) only

Ans: a) (i), (ii), (iii) only

3. Ruminants & Their Processes

Identify the correct **animal–process pairs**:

Animal	Process
(i) Cow	Chews cud (rumination)
(ii) Rabbit	Has 4-chambered stomach
(iii) Deer	Swallows partially chewed food
(iv) Human	Ruminant animal

a) (i), (iii) only b) (i), (ii), (iii) c) (ii), (iv) only d) All (i–iv)

Ans: a) (i), (iii) only

4. Digestive Juices & Roles

Choose the correctly matched pairs:

Secretion	Role
(i) Hydrochloric acid	Kills bacteria, activates pepsin
(ii) Bile juice	Breaks fats into small globules
(iii) Pancreatic juice	Digests starch, proteins, fats
(iv) Saliva	Digests fats completely

a) (i), (ii), (iii) only b) (i), (iv) only c) All (i–iv) d) (ii) & (iii) only

Ans: a) (i), (ii), (iii) only

5. Teeth & Their Functions

Select the correct **tooth–function pairs**:

Tooth	Function
(i) Incisors	Cutting & biting food
(ii) Canines	Tearing food
(iii) Premolars	Grinding & chewing
(iv) Molars	Crushing & grinding food

a) All (i–iv) b) (i), (ii), (iii) only c) (ii) & (iii) only d) (i) & (iv) only

Ans: a) All (i–iv)

Choose the Correct or Incorrect Sentence/Statement

1. Which of the following statements are correct?

a) Digestion of starch begins in the mouth with saliva.
b) Bile juice is produced by the liver and stored in the gall bladder.
c) Absorption of digested food takes place in the small intestine.
d) Large intestine is the site of complete digestion of proteins.

A) a, b and c B) a, c and d C) b, c and d D) a, b, c and d

Ans: A) a, b and c

2. Identify the incorrect statement.

a) Ruminants like cows and buffaloes chew cud. b) The rumen contains cellulose-digesting bacteria.
c) Cud is swallowed food that is later regurgitated for chewing.
d) Ruminants digest cellulose with the help of enzymes secreted in their stomach.

A) Only d B) a and c C) b and d D) a, b and c

Ans: A) Only d

3. Which of the following statements are correct about nutrition in Amoeba?

a) Amoeba takes in food using pseudopodia. b) Food is digested in a food vacuole.
c) Undigested food is thrown out by the cell membrane.
d) Amoeba has specialized digestive organs like stomach and intestine.

A) a, b and c B) a, c and d C) b and d D) a, b, c and d

Ans: A) a, b and c

4. Choose the incorrect **statement.**

a) Liver secretes bile juice that helps in digestion of fats.
b) Pancreas secretes pancreatic juice that digests carbohydrates, proteins, and fats.
c) Salivary glands secrete saliva which contains pepsin enzyme.
d) Hydrochloric acid in the stomach kills bacteria in food.

A) Only c B) a and d C) b and c D) a and c

Ans: A) Only c

5. Which statements are correct **about the human digestive system?**

a) Stomach churns food and mixes it with gastric juices.
b) Villi in the small intestine increase the surface area for absorption.
c) Rectum temporarily stores undigested food before egestion.
d) Esophagus secretes digestive enzymes to digest food.

A) a, b and c B) a, c and d C) b, c and d D) a, b, c and d

Ans: A) a, b and c



Chapter: Respiration in Organisms

7th CLASS

1. Sometimes when we do heavy exercise, anaerobic respiration takes place in our muscle cells. What is produced during this process?
(a) alcohol and lactic acid (b) alcohol and CO_2
(c) lactic acid and CO_2 (d) lactic acid only
Ans: d

2. Yeast is used in wine and beer industries because it respires.
(a) aerobically producing oxygen
(b) aerobically producing alcohol
(c) anaerobically producing alcohol
(d) anaerobically producing CO_2
Ans: c

3. During the process of exhalation, the ribs move
(a) down and inwards (b) up and inwards
(c) down and outwards (d) up and outward
Ans: a

4. Breathing is a process that
(i) provides O_2 to the body.
(ii) breaks down food to release energy.
(iii) helps the body to get rid of CO_2
(iv) produces water in the cells.
Which of the following gives the correct combination of functions of breathing?
(a) (i) and (ii) (b) (ii) and (iii)
(c) (i) and (iii) (d) (ii) and (iv)
Ans: c

5. Which are the gases involved in breathing?
(a) O2 and NO2 (b) O2 and SO2
(c) O2 and O3 (d) O2 and CO2
Ans: d

6. Name the organ of the body in which the blood is oxygenated.
(a) Heart (b) Lungs (c) Lever (d) Pancrea
Ans: b

7. Yeasts are used in
(a) wine and beer industry (b) bakery
(c) in both (d) none of these
Ans: a

8. Breathing rate in human beings in normal condition is
(a) 12-15 times in a minute
(b) 15-18 times in a minute
(c) 18-22 times in a minute
(d) 22-25 times in a minute
Ans: b

9. The process of breakdown of food in the cell with the release of energy is called _____
(a) Respiration (b) Inhalation
(c) Exhalation (d) Breathing
Ans: a

10. Giving out of air rich in carbon dioxide is called
(a) Respiration (b) Inhalation
(c) Exhalation (d) Breathing
Ans: c

11. To which disease is smoking linked?
(a) Appendicitis (b) Cancer (c) Fever (d) Anaemia
Ans: b

12. Name the organism which breathes through its skin
(a) Cat (b) Human beings (c) Dog (d) Earthworm
Ans: d

13. The small openings in the body of a cockroach are called
(a) Holes (b) Spiracles (c) Tracks (d) Pores
Ans: b

14. The air tubes that an insect has are useful for the exchange of_____
(a) Gases (b) Liquids (c) Solids (d) No exchange
Ans: a

15. The network of air tube in insects for gaseous exchange is called as
(a) Trachea (b) Spiracles (c) Stomata (d) Skin
Ans: a

16. Which of the following is most likely to have a much higher breathing rate?
(a) Man (b) Dog (c) Sparrow (d) Fish
Ans: d

17. The most common substrate for respiration is
(a) fats (b) amino acids (c) glucose (d) sucrose
Ans: c

18. Which part of nose prevents the passage of smoke dust inside the body:
(a) hair (b) nosal cavity (c) nostrils (d) none of these
Ans: a

19. Muscular floor of the chest cavity is called
(a) Rib cage (b) Diaphragm (c) Trachea (d) Bronchus
Ans: b

20. The organisms which cannot be seen with the naked eyes are called
(a) Plants (b) Microorganisms (c) Trachea (d) Bronchus
Ans: b

21. Oxidation of food inside cell takes place in
(a) Golgi bodies (b) Mitochondria
(c) Chromosome (d) Ribosome
Ans: b

22. The chemical used to test the carbon dioxide gas in exhaled air is
(a) Lime water (b) Limestone
(c) Lime juice (d) Quick lime
Ans: a

23. A molecule of haemoglobin carries oxygen molecules.
(a) 1 (b) 2 (c) 3 (d) 4
Ans: d

24. Voice box is present in
(a) Pharynx (b) Epiglottis (c) Mouth (d) Larynx
Ans: d

25. Small thin walled balloon like structure that help in exchange of gases are
(a) Arteries (b) Veins (c) Stomata (d) Alveoli
Ans: d

Assertion – Reason Questions

1. Assertion (A): Respiration is necessary for all living organisms to survive.
Reason (R): It provides energy by breaking down food molecules in cells.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false
d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

2. Assertion (A): In anaerobic respiration, glucose is broken down without using oxygen.
Reason (R): Anaerobic respiration produces more energy than aerobic respiration.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false
d) A is false, R is true
Ans: c) A is true, R is false

3. Assertion (A): Breathing is the same as respiration.
Reason (R): Breathing only involves the exchange of gases, while respiration includes the breakdown of food for energy.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false
d) A is false, R is true
Ans: d) A is false, R is true

4. Assertion (A): Plants respire only at night.
Reason (R): Plants take in oxygen and release carbon dioxide during respiration.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false
d) A is false, R is true
Ans: d) A is false, R is true

5. Assertion (A): Lungs are the main respiratory organs in humans.
Reason (R): They help in the exchange of oxygen and carbon dioxide between blood and air.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false
d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

Matching

1. Types of Respiration & Characteristics
Which of the following **pairs are correctly matched**?

Type of respiration	Characteristic
(i) Aerobic	Uses oxygen, releases CO_2 and water
(ii) Anaerobic	Produces alcohol or lactic acid
(iii) Aerobic	Produces less energy than anaerobic
(iv) Anaerobic	Occurs in yeast, muscles (during heavy exercise)

a) (i), (ii), (iv) only b) (i), (iii) only c) All (i–iv) d) (ii), (iv) only
Ans: a) (i), (ii), (iv) only

2. Respiratory Organs & Animals
Find the correct **organ–animal pairs**:

Organ	Animal
(i) Lungs	Humans
(ii) Gills	Fish
(iii) Skin	Earthworm
(iv) Spiracles & trachea	Cockroach

a) All (i–iv) b) (i), (ii), (iii) only c) (ii), (iii), (iv) only d) (i), (iv) only
Ans: a) All (i–iv)

3. Breathing Movements & Action
Match the movement with the correct action:

Movement	Action
(i) Diaphragm contracts	Chest cavity enlarges

(ii) Diaphragm relaxes	Air pushed out
(iii) Ribs move up & out	Air rushes into lungs
(iv) Ribs move down & in	Lungs expand

a) (i), (ii), (iii) only b) (i), (ii), (iv) only c) (i), (ii), (iii), (iv) all correct d) (i), (iii) only

Ans: a) (i), (ii), (iii) only

4. Products of Respiration

Select the correct **substrate–products pairs**:

Substrate	**Products**
(i) Glucose + O_2	CO_2 + H_2O + energy
(ii) Glucose (no O_2) in yeast	Alcohol + CO_2 + energy
(iii) Glucose (no O_2) in muscles	Lactic acid + energy
(iv) Glucose + O_2	Alcohol + CO_2 + energy

a) (i), (ii), (iii) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (iv) only

Ans: a) (i), (ii), (iii) only

5. Breathing in Different Animals

Which of these **animal–breathing mode pairs** are correct?

Animal	**Mode of breathing**
(i) Frog	Through skin & lungs
(ii) Whale	Through gills
(iii) Dolphin	Through blowholes
(iv) Insects	Through spiracles & trachea

a) (i), (iii), (iv) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (ii) only

Ans: a) (i), (iii), (iv) only

Choose the Correct or Incorrect Sentence/Statement

1. Which of the following statements are correct?

a) Breathing is a physical process of taking in oxygen and giving out carbon dioxide.
b) Respiration is the breakdown of food to release energy.
c) Breathing and respiration mean the same process. d) Respiration releases energy in the form of ATP.

A) a, b and d B) a and b only C) b, c and d D) a, b, c and d

Ans: A) a, b and d

2. Identify the incorrect statement about respiratory organs.

a) Earthworms breathe through their moist skin. b) Fish breathe with the help of gills.
c) Cockroach uses spiracles and tracheae for exchange of gases.
d) Frogs use only lungs for respiration throughout their life.

A) Only d B) a and b C) c and d D) b and c

Ans: A) Only d

3. Which of the following are incorrect?

a) Aerobic respiration takes place in the presence of oxygen.
b) Anaerobic respiration releases more energy than aerobic respiration.
c) Anaerobic respiration in muscles produces lactic acid.
d) Yeast carries out anaerobic respiration to produce alcohol and carbon dioxide.

A) Only b B) b and c C) a and b D) b and d

Ans: A) Only b

4. Which of the following statements are correct about breathing in humans?

a) During inhalation, ribs move upwards and diaphragm flattens.
b) During exhalation, ribs move down and diaphragm becomes dome-shaped.
c) Exchange of gases takes place in the alveoli of lungs. d) Oxygen is transported in blood by white blood cells.

A) a, b and c B) a, c and d C) b, c and d D) a, b, c and d

Ans: A) a, b and c

5. Which statements are correct for plants?

a) Plants respire only at night. b) Roots respire through root hairs.
c) All living cells of plants respire throughout the day and night.
d) Stomata in leaves help in exchange of gases for respiration.

A) b, c and d B) a and c C) a, b and c D) a, b and d

Ans: A) b, c and d

Chapter: Transportation in Animals and Plants 7th CLASS

1. Which of the following is the main circulatory fluid in our body?
(a) Plasma (b) Lymph (c) Blood (d) None of these
Ans: c

2. Which one of the following contains haemoglobin?
(a) RBC (b) WBC (c) Platelets (d) None of these
Ans: a

3. What is the function of WBCs?
(a) Transport of oxygen (b) Fight against germs
(c) Involved in blood clotting (d) All of these
Ans: b

4. Blood platelets help in
(a) formation of urine (b) excretion of urine
(c) sweating (d) blood clotting
Ans: d

5. The muscular tube through which stored urine is passed out of the body is called:
(a) kidney (b) ureter
(c) urethra (d) urinary bladder
Ans: c

6. They are pipe-like, consisting of a group of specialised cells. They transport substances and form a two-way traffic in plants. Which of the following terms qualify for the features mentioned above?
(a) Xylem tissue (b) Vascular tissue
(c) Root hairs (d) Phloem tissue.
Ans: d

7. The absorption of nutrients and exchange of respiratory gases between blood and tissues takes place in:
(a) veins (b) arteries (c) heart (d) capillaries
Ans: d

8. In which of the following parts of human body are sweat glands absent?
(a) Scalp (b) Armpits (c) Lips (d) Palms
Ans: c

9. In a tall tree, which force is responsible for pulling water and minerals from the soil?
(a) Gravitational force (b) Transportation force
(c) Suction force (d) Conduction force
Ans: c

10. Aquatic animals like fish excrete their wastes in gaseous form as
(a) Oxygen (b) Hydrogen
(c) Ammonia (d) Nitrogen
Ans: c

11. Blood carries _____ from lungs to the cells of the body
(a) Argon (b) Neon (c) Carbon dioxide (d) oxygen
Ans: d

12. The fluid part of the blood is called
(a) Plasma (b) RBC (c) WBC (d) Blood Platelets
Ans: a

13. The blood vessels which carry oxygen –rich blood from the heart to all parts of the body are called
(a) Arteries (b) Veins (c) RBC (d) WBC
Ans: a

14. White patches formed in areas like underarms are due to
(a) Salts present in the sweat
(b) sugars present in the sweat
(c) Acids present in the sweat
(d) Bases present in the sweat
Ans: a

15. The effect of sweat on the human body is
(a) It causes cooling (b) it causes heating
(c) it causes freezing (d) It causes melting
Ans: a

16. The uric acid excreted by lizards is
(a) White in colour (b) Red in colour
(c) Brown in Colour (d) Black in colour
Ans: a

17. The vascular tissue for the transport of water and nutrients in the plant is called
(a) Xylem (b) Phloem (c) Tissue (d) Plasma
Ans: a

18. The process by which a plant loses water through the stomata is called:
(a) excretion (b) transpiration
(c) respiration (d) sweating
Ans: b

19. The number of beats _____ is called the pulse rate.
(a) Per two minutes (b) Per three minutes
(c) Per minute (d) Per four minutes
Ans: c

20. Name an instrumental device used to amplify the sound of heart.
(a) Stethoscope (b) UV machine
(c) Both (a) and (b) (d) Ultrasound machine
Ans: a

21.What is the state of the blood?
(a) Solid (b) Fluid (c) Gas (d) None of these
Ans: b

22. Which blood group is called as universal donor?
(a) O (b) A (c) B (d) AB
Ans: a

23. The heart is located in the
(a) chest cavity (b) stomach
(c) lungs (d) all of these
Ans: a

24. How many chambers does the human heart have?
(a) Three (b) Four (c) Five (d) Two
Ans: b

25.Which of the following are the tiny filtering units of the kidney?
(a) ureters (b) bladder (c) nephrons (d) urethra
Ans: c

Assertion – Reason Questions

1. Assertion (A): The heart pumps blood to all parts of the body through blood vessels.
Reason (R): Blood carries oxygen and nutrients to body tissues and removes wastes like carbon dioxide.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

2. Assertion (A): Kidneys remove nitrogenous wastes from the blood in humans.
Reason (R): The waste filtered by kidneys is stored in the bladder as urine before being excreted.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

3. Assertion (A): Xylem transports water and minerals from roots to other parts of the plant.
Reason (R): Phloem carries water only from roots to leaves.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: c) A is true, R is false

4. Assertion (A): Red blood cells carry oxygen in the blood.
Reason (R): Haemoglobin present in red blood cells binds with oxygen to transport it.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

5. Assertion (A): Loss of water in the form of water vapour from plant leaves is called transpiration.
Reason (R): Transpiration helps in the absorption and upward movement of water and minerals in plants.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

Matching

1. Circulatory System – Components & Functions

Which of the following **pairs are correctly matched**?

Component	Function
(i) Heart	Pumps blood to all parts of the body
(ii) Arteries	Carry blood away from the heart
(iii) Veins	Carry blood towards the heart
(iv) Platelets	Transport oxygen

a) (i), (ii), (iii) only b) (i), (iii), (iv) only c) All (i–iv) d) (ii), (iv) only
Ans: a) (i), (ii), (iii) only

2. Blood Components & Roles

Identify the correctly matched **blood component–function pairs**:

Component	Function
(i) RBCs	Carry oxygen using haemoglobin
(ii) WBCs	Protect the body from infections
(iii) Platelets	Help in clotting of blood
(iv) Plasma	Transports nutrients, hormones & wastes

a) (i), (ii), (iii) only b) (i), (ii), (iii), (iv) c) (ii), (iii), (iv) only d) (i), (iii), (iv) only
Ans: b) (i), (ii), (iii), (iv)

3. Transportation in Plants – Part & Function

Choose the correct **plant tissue–function pairs**:

Tissue	Function
(i) Xylem	Transports water & minerals
(ii) Phloem	Transports food from leaves
(iii) Stomata	Take up water from soil
(iv) Root hairs	Absorb water & minerals from soil

a) (i), (ii), (iv) only b) (i), (iii), (iv) only c) (ii), (iii) only d) All (i–iv)

Ans: a) (i), (ii), (iv) only

4. Excretion in Animals – Organ & Role

Match the animal with its excretory organ:

Animal	Excretory organ
(i) Human	Kidneys
(ii) Earthworm	Nephridia
(iii) Cockroach	Malpighian tubules
(iv) Fish	Stomata

a) (i), (ii), (iii) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (iii) only

Ans: a) (i), (ii), (iii) only

5. Plant Processes – Terms & Meanings

Find the correctly matched **term–meaning pairs**:

Term	Meaning
(i) Transpiration	Loss of water vapour through leaves
(ii) Ascent of sap	Upward movement of water & minerals
(iii) Circulation	Continuous flow of blood in animals
(iv) Photosynthesis	Transport of food in plants

a) (i), (ii), (iii) only b) (i), (ii), (iv) only c) All (i–iv) d) (i) & (ii) only

Ans: a) (i), (ii), (iii) only

Choose the Correct or Incorrect Sentence/Statement

1. Which of the following statements are correct?

a) Red blood cells carry oxygen with the help of haemoglobin. b) White blood cells fight infections.
c) Platelets help in clotting of blood. d) Plasma is the solid part of blood.

A) a, b and c B) b, c and d C) a, b, c and d D) a and b only

Ans: A) a, b and c

2. Find the incorrect statements about circulation in humans:

a) The heart pumps oxygenated blood to all parts of the body.
b) Veins carry blood away from the heart to different organs. c) Valves in veins prevent the backward flow of blood.
d) Pulmonary artery carries oxygen-rich blood from the heart to lungs.

A) b and d B) a and b C) a, b and d D) a, b, c and d

Ans: B) b and d

3. Which of the following are correct?

a) Xylem carries water and minerals from roots to leaves. b) Phloem transports food from leaves to other parts.
c) Transport of food in plants is called translocation. d) Transport of water in plants is called transpiration.

A) a, b and c B) a, c and d C) a, b, c and d D) b, c and d

Ans: A) a, b and c

4. Choose the correct statements:

a) Kidneys filter waste products from the blood. b) Ureters carry urine from kidneys to bladder.
c) Sweat glands remove water, salts, and urea. d) Urinary bladder pumps urine out of the body.

A) a, b and c B) b and d C) a, b, c and d D) a and d

Ans: A) a, b and c

5. Which statements about transpiration are correct?

a) Transpiration is the loss of water vapour from aerial parts of plants. b) It mainly occurs through stomata.
c) Transpiration helps in cooling the plant and in the upward movement of water.
d) Transpiration takes place only at night.

A) a, b and c B) b and d C) a, c and d D) a, b, c and d

Ans: A) a, b and c

Chapter: Reproduction in Plants 7th CLASS

1. Vegetative propagation in potato takes place by
(a) leaves (b) stem (c) root (d) seed
Ans: (b) stem

2. In which of the following plants buds are present on the margins of leaves?
(a) Bryophyllum (b) Touch me not
(c) Chandan (d) Coriander
Ans: (a) Bryophyllum

3. In yeasts reproduction occurs by
(a) fragmentation (b) binary fission
(c) budding (d) spore formation
Ans: (c) budding

4. Lila observed that a pond with clear water was covered up with a green algae within a week. By which method of reproduction did the algae spread so rapidly?
(a) Budding (b) Sexual reproduction
(c) Fragmentation (d) Pollination
Ans: (c) Fragmentation

5. Seeds of drumstick and maple are carried to long distances by wind because they possess
(a) winged seeds (b) large and hairy seeds
(c) long and ridged fruits (d) spiny seeds
Ans: (a) winged seeds

6. The 'eye of the potato plant is what
(a) the root is to any plant (b) the bud is to a flower
(c) the bud is to Bryophyllum leaf
(d) the anther is to stamen
Ans: (c) the bud is to Bryophyllum leaf

7. The ovaries of different flowers may contain
(a) only one ovule (b) many ovules
(c) one to many ovules (d) only two ovules
Ans: (c) one to many ovules

8. Pollination refers to the:
(a) transfer of pollen from anther to ovary
(b) transfer of male gametes from anther to stigma
(c) transfer of pollen from anther to stigma
(d) transfer of pollen from anther to ovule
Ans: (c) transfer of pollen from anther to stigma

9. The production of new individuals from their parents is known as _____
(a) Reproduction (b) Production
(c) Vegetative propagation (d) Sprouting
Ans: (a) Reproduction

10. Male reproductive part of a plant is
(a) Pores (b) Pistil (c) Stamen (d) Fusion
Ans: (c) Stamen

11. Reproduction through spore formation takes place in
(a) Fern (b) Algae (c) Fungi (d) Yeast
Ans: (a) Fern

12. The flowers which contain either only the pistil or only the stamens are called
(a) Unisexual flowers (b) Bisexual flowers
(c) Asexual flowers (d) None of the above
Ans: (a) Unisexual flowers

14. The transfer of pollen from the anther to the stigma of a flower is called:
(a) fragmentation (b) fertilisation
(c) pollination (d) reproduction
Ans: (c) pollination

15. Reproduction is essential for living organism in order to
(a) Keep individual organ alive (b) Maintain growth
(c) Fulfill their energy requirement
(d) continue the species forever
Ans: (d) continue the species forever

16. The zygote develops into
(a) a seed (b) an ovule (c) a fruit (d) an embryo
Ans: (d) an embryo

17. Rose and lemon are grown from:
(a) tubers (b) bulbs (c) stem cuttings (d) leaf buds
Ans: (c) stem cuttings

18.The seeds dispersed by birds and animals are:
(a) less smell (b) very smelly
(c) with smell and nectar (d) none of these
Ans: (c) with smell and nectar

19. What is the function of flower in plants:
(a) reproduction (b) transportation
(c) transpiration (d) respiration
Ans: (a) reproduction

20. Mature ovule forms
(a) Buds (b) Endosperm (c) Fruit (d) Seed
Ans: (d) Seed

Assertion – Reason Questions

1. Assertion (A): Vegetative propagation is an asexual method of reproduction in plants.
Reason (R): It involves the formation of new plants from vegetative parts such as roots, stems, or leaves.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false
d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

2. Assertion (A): Yeast reproduces by budding.
Reason (R): A small bud develops on the yeast cell, grows, and detaches to form a new organism.

a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true

Ans: a) Both A and R are true, and R is the correct explanation of A

3. Assertion (A): Pollination is the transfer of pollen grains from the anther to the stigma of a flower.
Reason (R): Pollination can be carried out only by water.

a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true

Ans: c) A is true, R is false

4. Assertion (A): Fertilization is the fusion of male and female gametes in plants.
Reason (R): Fertilization leads to the formation of a zygote which develops into an embryo.

a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true

Ans: a) Both A and R are true, and R is the correct explanation of A

5. Assertion (A): Seed dispersal is essential for plants to avoid overcrowding.
Reason (R): Dispersal allows seeds to spread to new places where they can germinate and grow.

a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true

Ans: a) Both A and R are true, and R is the correct explanation of A

Matching

1. Methods of Reproduction & Examples

Which of the following **pairs are correctly matched**?

Method of reproduction	Example
(i) Budding	Yeast
(ii) Fragmentation	Spirogyra
(iii) Spore formation	Moss & ferns
(iv) Binary fission	Bryophyllum

a) (i), (ii), (iii) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (iv) only

Ans: a) (i), (ii), (iii) only

2. Flower Parts & Functions

Identify the correct **flower part–function pairs**:

Part	Function
(i) Stamen	Male reproductive organ
(ii) Anther	Produces pollen grains
(iii) Pistil	Female reproductive organ
(iv) Ovary	Produces male gametes

a) (i), (ii), (iii) only b) (i), (iii), (iv) only c) All (i–iv) d) (ii), (iv) only

Ans: a) (i), (ii), (iii) only

3. Vegetative Propagation & Plant Parts

Choose the correctly matched **plant–part used for propagation**:

Plant	Part used
(i) Potato	Tuber
(ii) Ginger	Rhizome
(iii) Bryophyllum	Leaf buds
(iv) Mango	Stem cuttings

a) (i), (ii), (iii) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (ii), (iv) only

Ans: a) (i), (ii), (iii) only

4. Pollination & Agents

Which of the following **pollination–agent pairs** are correct?

Pollination agent	Example
(i) Insects	Bees, butterflies
(ii) Wind	Grass, maize
(iii) Water	Vallisneria
(iv) Bats	Mango

a) (i), (ii), (iii) only b) (i), (ii), (iv) only c) All (i–iv) d) (ii), (iii), (iv) only

Ans: a) (i), (ii), (iii) only

5. Seed Formation & Germination

Find the correctly matched **term–meaning pairs**:

Term	Meaning
(i) Fertilisation	Fusion of male & female gametes
(ii) Ovule	Develops into seed after fertilisation
(iii) Ovary	Develops into fruit
(iv) Plumule	Part of seed forming root

a) (i), (ii), (iii) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (ii), (iii), (iv) with correction of (iv)

Ans: a) (i), (ii), (iii) only

Choose the Correct or Incorrect Sentence/Statement

1. Which of the following statements are correct?

a) Budding in yeast is an example of asexual reproduction. b) Fragmentation occurs in Spirogyra.
c) Spores are produced by Rhizopus for reproduction. d) Asexual reproduction requires fusion of gametes.

A) a, b and c B) a and d C) b, c and d D) a, b, c and d

Ans: A) a, b and c

2. Find the incorrect statement:

a) Stamen is the male reproductive part of a flower. b) Carpel is the female reproductive part.
c) Pollination is the transfer of pollen from anther to stigma.
d) Fertilisation is the transfer of pollen grains to the ovary.

A) Only d B) a and b C) b and c D) c and d

Ans: A) Only d

3. Which statements are correct?

a) Pollination can be self or cross. b) Wind, water, insects, and birds act as pollinating agents.
c) Cross-pollination always produces new species. d) Pollination occurs only in unisexual flowers.

A) a and b B) b and c C) a, b and d D) a, b, c and d

Ans: A) a and b

4. Choose the correct statements:

a) After fertilisation, ovules develop into seeds. b) Ovary develops into fruit.
c) Seeds germinate only when they get air, water, and warmth.
d) Cotyledons provide food to the seedling during germination.

A) a, b and c B) b, c and d C) a, b, c and d D) a and c only

Ans: C) a, b, c and d

5. Which of the following are incorrect?

a) Bryophyllum reproduces through leaf buds. b) Potato reproduces through stem tuber.
c) Mango reproduces by stem cuttings naturally. d) Sugarcane is propagated by stem cuttings.

A) Only c B) a and c C) b and d D) a and d

Ans: A) Only c

Chapter: Our Lifeline 7th CLASS

1. Which one of the following is not a wild animal?
(a) Bear (b) Bison (c) Jackal (d) Goat
Ans: (d) Goat

2. Which one of the following is an animal product?
(a) Gum (b) Catechu (c) Honey (d) Rubber
Ans: (c) Honey

3. Roof of the forest made by the branches of the tall trees is called
(a) canopy (b) crown
(c) understoreys (d) none of these
Ans: (a) canopy

4. Decomposers convert the dead plant and animal tissues into
(a) clay (b) humus (c) inorganic debris (d) soil
Ans: (b) humus

5. A series of organisms in which an organism depends on the next organism for food is called
(a) food series (b) food chain
(c) food web (d) food hub
Ans: (b) food chain

6. Which among the following forest animals is the smallest?
(a) Fox (b) Boar (c) Bison (d) Porcupine
Ans: (d) Porcupine

7. Which industry totally depends upon forest product?
(a) Agriculture (b) Rubber industry
(c) Furniture industry (d) Textile industry
Ans: (c) Furniture industry

8. The rainfall will be less in absence of:
(a) forests (b) town (c) village (d) none of these
Ans: (a) forests

9. Which of the following is not a forest product?
(a) Rubber (b) Sealing wax
(c) Kerosene (d) Plywood
Ans: (c) Kerosene

10. Environment and cool and peaceful in
(a) Town (b) Village (c) Metro (d) Cities
Ans: (b) Village

11. The branchy part of a tree above the stem is called
(a) leaves (b) crown (c) saplings (d) canopy
Ans: (b) crown

12. Bark from which of the following tree is used to cure malaria?
(a) Cinchona (b) Orange (c) Mango (d) Peepal
Ans: (a) Cinchona

13.The item that is not a product of Forest
(a) Sealing Wax (b) Honey
(c) Wooden statue (d) Salt
Ans: (d) Salt

14. Find the missing word from the following equation
Grass→ insect s→ frog →..... → eagle
(a) Peacock (b) Snake (c) Koel (d) Crow
Ans: (b) Snake

15. Forests are called
(a) Green lungs (b) Black skin
(c) Red kidney (d) Brown heart
Ans: (a) Green lungs

16. Floods can be controlled by
(a) Forests (b) Afforestation (c) Constructing Pits
(d) By allowing the water to flow into the sea
Ans: (a) Forests

17. Cutting of tree on large scale is called
(a) Urbanization (b) Industrialization
(c) Deforestation (d) Afforestation
Ans: (c) Deforestation

18. Greenhouse gases
(a) trap heat of the sun (b) are green in colour
(c) do not trap heat of the sun (d) smell foul
Ans: (a) trap heat of the sun

19. Heavy rain may also damages the:
(a) roots (b) soil (c) humus (d) none of these
Ans: (a) roots

20. Micro-organisms eating dead bodies of plants and animals are called:
(a) scavengers (b) herbivores
(c) decomposers (d) none of these
Ans: (c) decomposers

21. Select the country that is the largest producer of fuel wood in the world.
(a) India (b) China (c) Russia (d) Indonesia
Ans: (c) Russia

22. The insects butterflies help flowering plant in:
(a) deforestation (b) pollination
(c) humus (d) none of these
Ans: (b) pollination

23. Thing that is not obtained from the wood is
(a) paper (b) thermocol (c) matchsticks (d) plywood
Ans: (b) thermocol

24. A tree species in Mauritius failed to reproduce because of extinction of a fruit eating bird. The bird was
(a) Condor (b) Dodo
(c) Dove (d) Skua
Ans: (b) Dodo

25. The cricket bats are made out of wood of which of the following?
(a) Sal (b) Rose wood
(c) Teak (d) Willow
Ans: (d) Willow

Assertion – Reason Questions

1. Assertion (A): Forests maintain the fertility of the soil.
Reason (R): Dead plants and animals form humus which enriches the soil.
a) A and R are true, and R is the correct explanation of A b) A and R are true, but R is not the correct explanation
c) A is true, R is false d) A is false, R is true
Ans: a) A and R are true, and R is the correct explanation of A

2. Assertion (A): Carnivores are essential to maintain the balance of organisms in forests.
Reason (R): They limit the population of herbivores, preventing overgrazing of plants.
a) A and R are true, and R is the correct explanation of A b) A and R are true, but R is not the correct explanation
c) A is true, R is false d) A is false, R is true
Ans: a) A and R are true, and R is the correct explanation of A

3. Assertion (A): Forests help in maintaining the water cycle.
Reason (R): The roots of trees absorb water and release oxygen during photosynthesis.
a) A and R are true, and R is the correct explanation of A b) A and R are true, but R is not the correct explanation
c) A is true, R is false d) A is false, R is true
Ans: b) A and R are true, but R is not the correct explanation

4. Assertion (A): Deforestation can lead to floods and droughts.
Reason (R): Cutting trees reduces infiltration of rainwater and disturbs the balance of water in soil and atmosphere.
a) A and R are true, and R is the correct explanation of A b) A and R are true, but R is not the correct explanation
c) A is true, R is false d) A is false, R is true
Ans: a) A and R are true, and R is the correct explanation of A

5. Assertion (A): Decomposers play no role in the forest ecosystem.
Reason (R): Nutrients are supplied only by plants during photosynthesis.
a) A and R are true, and R is the correct explanation b) A and R are true, but R is not the correct explanation
c) A is false, R is true d) A is true, R is false
Ans: c) A is false, R is true

Matching

1. Forest Layers & Features

Which of the following **pairs are correctly matched**?

Forest layer	Feature
(i) Canopy	Uppermost layer formed by tall trees
(ii) Understorey	Shrubs and young trees below canopy
(iii) Forest floor	Dark, damp layer with decomposers
(iv) Herb layer	Roots spread deep underground

Choose the correct option
a) (i), (ii), (iii) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i) & (iii) only
Ans: a) (i), (ii), (iii) only

2. Forest Organisms & Their Roles

Organism	Role
(i) Decomposers (fungi, bacteria)	Break down dead matter
(ii) Herbivores	Eat plants and leaves
(iii) Carnivores	Eat herbivores
(iv) Parasites	Add nutrients to soil

Choose the correct option
a) (i), (ii), (iii) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (iv) only
Ans: a) (i), (ii), (iii) only

3. Products & Uses of Forests

Forest product	Use
(i) Timber	Making furniture
(ii) Gum	Used in medicines and adhesives
(iii) Honey	Food and medicines
(iv) Coal	Obtained directly from forest trees

Choose the correct option
a) (i), (ii), (iii) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (iv) only

Ans: a) (i), (ii), (iii) only

4. Importance of Forests

Function	Description
(i) Prevent soil erosion	Roots hold soil firmly
(ii) Maintain water cycle	Help in cloud formation & rainfall
(iii) Purify air	Release O_2, absorb CO_2
(iv) Reduce temperature	Provide fossil fuels

Choose the correct option

a) (i), (ii), (iii) only b) (i), (ii), (iv) only c) All (i–iv) d) (ii), (iii), (iv) only

Ans: a) (i), (ii), (iii) only

5. Forest Conservation & Stakeholders

Stakeholder	Role
(i) Forest officials	Manage forest resources
(ii) Local people	Depend on forests sustainably
(iii) Industrialists	Always protect forests
(iv) Wildlife	Maintain ecological balance

Choose the correct option

a) (i), (ii), (iv) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (iv) only

Ans: a) (i), (ii), (iv) only

Choose the Correct or Incorrect Sentence/Statement

1. Which of the following statements are correct?

a) Forests prevent soil erosion. b) Forests help in maintaining the water cycle.

c) Forests act as carbon sinks by absorbing CO_2. d) Forests do not influence rainfall.

A) a, b and c B) a, c and d C) a, b, c and d D) b and c only

Ans: A) a, b and c

2. Identify the incorrect statement:

a) The topmost layer is called the canopy. b) Understory lies below the canopy.

c) Forest floor is the lowest layer. d) Shrubs grow only above the canopy.

A) Only d B) a and b C) c and d D) b and d

Ans: A) Only d

3. Which of the following are correct?

a) Dead leaves and animal droppings form humus. b) Humus increases soil fertility.

c) Forest litter prevents water from evaporating. d) Forest soil is infertile because of humus.

A) a, b and c B) b and d C) a and d D) c and d

Ans: A) a, b and c

4. Choose the correct statements:

a) Herbivores maintain a balance by eating plants. b) Carnivores control the population of herbivores.

c) Decomposers recycle nutrients back to the soil. d) Forest animals have no effect on the food chain.

A) a, b and c B) b and d C) a, c and d D) a, b, c and d

Ans: A) a, b and c

5. Which statements are incorrect?

a) Deforestation reduces rainfall and causes floods. b) Forests help in purifying air.

c) Cutting down forests has no impact on wildlife. d) Afforestation is the planting of new trees.

A) Only c B) b and c C) a and b D) a and c

Ans: A) Only c

Chapter: Wastewater story

7th CLASS

1. Which one of the following is a quality of wastewater?
(a) Foul smell (b) Sweet taste
(c) Sewage (d) None of these
Ans: (a) Foul smell

2. Period 2005-2015 is being celebrated as the international decade for action on
(a) water for life (b) education for all
(c) global war (d) terrorism
Ans: (a) water for life

3. In sewerage manholes are located at every
(a) 20-25 m (b) 50-60 m
(c) 90-100 m (d) 100-110 m
Ans: (b) 50-60 m

4. Sludge in separate tanks is decomposed to get biogas by
(a) yeasts (b) aerobic bacteria
(c) anaerobic bacteria (d) none of these
Ans: (b) aerobic bacteria

5. Which one of the following is used in vermi-processing toilet?
(a) Earthworm (b) Cockroach
(c) Both of these (d) None of these
Ans: (a) Earthworm

6. Sewage is mainly a
(a) liquid waste (b) Solid waste
(c) gaseous waste (d) Mixture of solid and gas
Ans: (a) liquid waste

7. Which of the following is/are products of wastewater treatment?
(a) Biogas (b) Sludge
(c) Both Biogas and sludge (d) Aerator
Ans: (c) Both Biogas and sludge

8. Open drain system is a breeding place for which of the following:
(a) Files (b) Mosquitoes
(c) Organisms which cause diseases (d) All of these
Ans: (d) All of these

9. Which of the following is not a source of waste water?
(a) Sewers (b) Homes (c) Industries (d) Hospital
Ans: (a) Sewers

10. Which of the following is wastewater?
(a) Water trickling from a damaged tap
(b) Water coming out of a shower
(c) Water flowing in a river
(d) Water coming out of a laundry
Ans: (d) Water coming out of a laundry

11. Water that is not fit for use is called
(a) clean water (b) wastewater
(c) both (a) and (b) (d) none of these
Ans: (b) wastewater

12. Untreated human excreta is a:
(a) waste water (b) health hazard
(c) manure (d) none of these
Ans: (b) health hazard

13. Which one is not a of household garbage
(a) Vegetable peels (b) Dal packets
(c) Crockery pieces (d) Cow dung
Ans: (d) Cow dung

14. Which process removes the solids like foeces and other substances from the waste water:
(a) chlorination (b) decomposition
(c) evaporation (d) sand and grit removal
Ans: (d) sand and grit removal

15. Excreta from the toilet seats flow through covered drains into a chemicals:
(a) chemicals (b) biogas plant
(c) vermi-processing toilets (d) none of these
Ans: (b) biogas plant

16. Sanitation in the cities is the function of
(a) Municipal corporation
(b) Non-government organisation
(c) Individual person (d) Societies of locality
Ans: (a) Municipal corporation

17. The process of removing pollutants in water before it enter a water body is called
(a) cleaning of water (b) refining
(c) filtering of water (d) none of these
Ans: (a) cleaning of water

18.The biogas product is used as a source of:
(a) rains (b) oils (c) energy (d) all of these
Ans: (c) energy

19. Which of the following is a part of inorganic impurities of the sewage?
(a) Pesticides (b) Urea
(c) Phosphates (d) Vegetable waste
Ans: (c) Phosphates

20. What helps to clean the clarified water:
(a) aerobic bacteria (b) anaerobic bacteria
(c) both (a) and (b) (d) none of these
Ans: (a) aerobic bacteria

21. Liquid waste consisting of suspended impurities is called
(a) Contaminant (b) Sewage
(c) Aeration (d) Chlorination
Ans: (b) Sewage

22. WWTP stands for
(a) Waste Water Therapy Plant
(b) Waste Water Treatment Plant
(c) Waste Water Travel Plant
(d) Waste Water Tremendous Plant
Ans: (b) Waste Water Treatment Plant

23. Cooking oil and fats should not be thrown down the drain because
(a) They flow through the drain freely
(b) It allows the particles to get filtered
(c) They harden and block the pipe
(d) They break the pipe
Ans: (c) They harden and block the pipe

24. Water borne disease is (a) Diabetes (b) Cancer (c) Appendicitis (d) Cholera **Ans:** (d) Cholera	**25. Biodegradable wastes are generally** (a) Blended (b) Synthetic (c) Organic (d) Inorganic **Ans:** (c) Organic

Assertion – Reason Questions

1. Assertion (A): Wastewater should be treated before being released into rivers or lakes.
Reason (R): Untreated wastewater contains harmful substances that pollute water bodies and harm aquatic life.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

2. Assertion (A): Bar screens in sewage treatment plants help remove floating debris.
Reason (R): They allow only clear water to pass and block large solid waste like rags, sticks, and cans.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

3. Assertion (A): Aeration tanks are used in sewage treatment plants to increase the number of microorganisms.
Reason (R): Microorganisms require oxygen to break down organic matter present in sewage.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

4. Assertion (A): Vermi-processing toilets use earthworms to treat human waste.
Reason (R): Earthworms help in decomposing waste into compost which can be safely used as manure.
a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not the correct explanation of A
c) A is true, R is false d) A is false, R is true
Ans: a) Both A and R are true, and R is the correct explanation of A

5. Assertion (A): Throwing solid waste like plastic bags and napkins into drains is a good practice.
Reason (R): They block the drainage system and cause overflow of sewage.
a) A and R are true, and R is the correct explanation of A
b) A and R are true, but R is not the correct explanation of A
c) A is false, R is true d) A is true, R is false
Ans: c) A is false, R is true

Matching

1. Wastewater Terms & Meanings

Which of the following **pairs are correctly matched**?

Term	Meaning
(i) Wastewater	Water that carries impurities from homes, industries, etc.
(ii) Sewage	Wastewater containing human & animal excreta
(iii) Sanitation	Safe disposal of human excreta
(iv) Sludge	Dried solid waste used to prepare drinking water

a) (i), (ii), (iii) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (iv) only
Ans: a) (i), (ii), (iii) only

2. Stages of Wastewater Treatment & Description

Stage	Description
(i) Screening	Removal of large objects like sticks, rags
(ii) Grit & sand removal	Settling of sand and pebbles
(iii) Aeration	Air pumped to help microbes decompose waste
(iv) Chlorination	Adding chlorine to make water salty

Choose the correct option
a) (i), (ii), (iii) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (iii) only
Ans: a) (i), (ii), (iii) only

3. Micro-organisms & Their Roles in Treatment

Micro-organism	Role
(i) Aerobic bacteria	Break down organic waste in presence of oxygen
(ii) Anaerobic bacteria	Decompose sludge without oxygen
(iii) Algae	Add colour and block treatment
(iv) Fungi	Sometimes help decompose organic matter

Choose the correct option

a) (i), (ii), (iv) only b) (ii), (iii) only c) All (i–iv) d) (i), (iii) only

Ans: a) (i), (ii), (iv) only

4. Pollutants & Their Sources

Pollutant	Source
(i) Soap & detergents	Domestic wastewater
(ii) Pesticides	Agricultural runoff
(iii) Heavy metals	Industrial discharge
(iv) Leaves & twigs	Filtration chemicals

Choose the correct option

a) (i), (ii), (iii) only b) (ii), (iii), (iv) only c) All (i–iv) d) (i), (iii), (iv) only

Ans: a) (i), (ii), (iii) only

5. Good Practices & Their Effects

Practice	Effect
(i) Avoid throwing cooking oil into drains	Prevents clogging of pipes
(ii) Use of eco-friendly cleaning agents	Reduces water pollution
(iii) Proper sanitation in open areas	Prevents spread of diseases
(iv) Adding plastics to compost	Improves compost quality

Choose the correct option

a) (i), (ii), (iii) only b) (i), (ii) only c) All (i–iv) d) (ii), (iii), (iv) only

Ans: a) (i), (ii), (iii) only

Item	Expand/ Abbreviation
LED	Light Emitting Diode
CFL	Compact Fluorescent Lamp
MCB	Miniature Circuit Breaker
LASER	Light Amplification by Stimulated Emission of Radiation
PCB	Printed Circuit Board
LPG	Liquefied Petroleum Gas
CNG	Compressed Natural Gas
DNA	Deoxyribonucleic Acid
RNA	Ribonucleic Acid
ATP	Adenosine Triphosphate
HIV	Human Immunodeficiency Virus
ADP	Adenosine Diphosphate
RBC	Red Blood Cells
WBC	White Blood Cells

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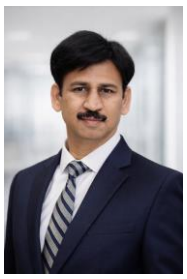

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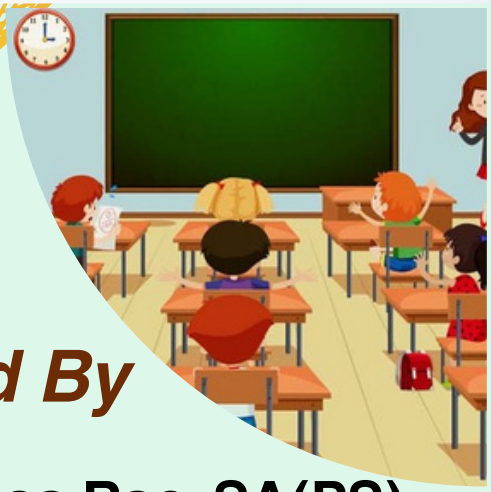

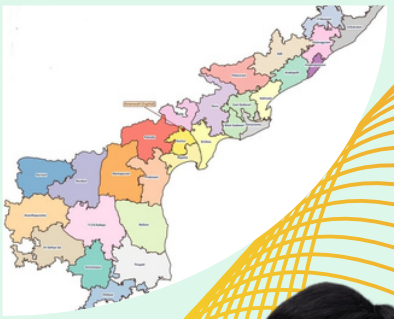

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