Comparisons/Differences(2 & 4 marks Questions)

PHYSICS

Sample Comparison

	X	Y
Defination		
Symbol		
Unit		
Scalar/ Vector		
Formula		
Dependable factors		
Examples		
Others		

Note: This table helpful for the physical quantities
Generally For 2 marks questions→ Write any Two differences
Generally For 4 marks questions→ Write any Four differences

1.Write the differences between Heat and Temperature

Heat	Temperature
1.Heat is the energy that flows from a hotter body to a closer body	1.The degree of hotness or coldness of the object is known as temperature
2.It is denoted by 'Q'	2.It is denoted by 'T'
3.S.I unit is Joule	3. S.I unit is Kelvin
4. Vector quantity	4. Scalar Quantity

2. Write the differences between Heat and Specific heat

Heat	Specific heat
1.Heat is the energy that flows from a hotter body to a closer body	1.The amount of heat required to raise the temperature of unit mass of the substance
2.It is denoted by 'Q'	2.It is denoted by "s"
3.S.I unit is Joule	3. S.I unit is J/kg-K
4. Vector quantity	4. Vector quantity
5. Q= msΔT	5 .s= Q/mΔT
6.Its depends on nature of the substance, mass and raise in temperature	6. Its depends on nature of the substance, temperature

3. Write the differences between Heat and Latent heat

Heat	Latent heat
1.Heat is the energy that flows from a hotter body to a closer body	1.The heat is required to convert one state to another state, without change of temperature
2.It is denoted by 'Q'	2. It is denoted by 'L'
3.S.I unit is Joule	3. S.I unit is J/kg
4. Vector quantity	4. Vector quantity
5. Q= msΔT	5. L= Q/m

4. Write the differences between Specific heat and Latent heat

Specific heat	Latent heat
1.The amount of heat required to raise the temperature of unit mass of the substance	1.The heat is required to convert one state to another state, without change of temperature
2.It is denoted by "s"	2. It is denoted by 'L'
3. S.I unit is J/kg-K	3. S.I unit is J/kg
4. Vector quantity	4. Vector quantity
5. s= Q/mΔT	5. L= Q/m

5.Write the differences between Evaporation and Boiling

Evaporation	Boiling
1.The process of escaping of molecules from the surface of a liquid at any temperature is called evaporation	1.The process in which the liquid phase changes to gaseous phase at constant temperature is called boiling
2. Cooling process	2. Not a cooling process
3.Evaporation takes places at any temperature	3.Boiling takes places at constant temperature
4.Its depends on the surface area, humidity, temperature and wind speed	4.Its depends on the nature of substance

6.Write the differences between Concave lens and Convex lens

Concave lens	Convex lens
1.Divergent lens	1.Convergent lens
2. Its symbol is 	2.Its symbol is 
3.Always forms virtual images by this lens	3. Real and virtual images are formed by this lens
4.Always erected image is formed	4. Inverted and Erected images are formed
5.Always diminished image is formed	5. Enlarge ,Diminish and Same size of images are formed
6.Focal length value always negative	6. Focal length value always positive
7.It is used to correct Myopia	7. It is used to correct Hypermetropia

7.Write the differences between Myopia and Hypermetropia

Myopia	Hypermetropia
1.Some people cannot see objects at long distances but can see nearby objects clearly. This type of eye defect is called 'Myopia'	1. Some people cannot see objects at near distances but can see long objects clearly. This type of eye defect is called 'Hypermetropia'
2.It is called near sightedness	2.It is called far sightedness
3.Focal length is less than 2.5 cm	3.Focal length is greater than 2.27 cm
4. f= -D	4. f=25d/d-25
5.Far point exit this eye defect	5. Near point exit this eye defect
6. By using concave lens ,corrected this eye defect	6. By using convex lens, corrected this

8. Write the differences between potential difference and Electromotive force (emf)

Potential difference	emf
1.Work done by the electric force to move unit positive charge from one point to another point is called potential difference	1.Work done by the chemical force to move unit positive charge from negative terminal to positive terminal of the battery
2. Its symbol is 'V'	2.Its symbol is 'ε'
3. S.I unit is volt(V)	3. S.I unit is volt(V)
4. V=W/q	4. ε= W/q
5. This can be measured by using voltmeter	5. This can be measured by using voltmeter

9. Write the differences between Resistance and Resistivity

Resistance	Specific resistance or Resistivity
1.The obstruction to the motion of the electrons in a conductor is known as Resistance	1.The resistance of a conductor of unit length and unit area of cross section is called Resistivity
2. It is denoted by 'R'	2.It is denoted by ' ρ'
3. S.I unit is ohm(Ω)	3. S.I unit is ohm-metre(Ω-m)
4. $R=\rho l/A$	4. $\rho= RA/l$
5. Its depends on nature of the material, length, area of cross section and temperature	5. Its depends on nature of the material and temperature

10. Write the difference between Electric motor and Generator

Electric motor	Generator
1.This device converts electrical energy into mechanical energy	1.This device converts mechanical energy into electrical energy
2.It uses electricity	2.It generates electricity
3.It follows Fleming's left hand rule	3.It follows Fleming's right hand rule
4.Its works on the principle that a current carrying conductor experiences a force when placed in a uniform magnetic field	4.It is works on the principle of electromagnetic induction
5.Electric motors are used in Ceiling fans, bike, fridge etc	5.Generators are used in Power stations

11.Write the differences between AC generator and DC generator

AC generator	DC generator
1.This device converts mechanical energy into electrical energy	1.This device converts mechanical energy into electrical energy
2.Alternating current is main input power	2.Direct current is the main input power
3. It is works on the principle of electromagnetic induction	3. It is works on the principle of electromagnetic induction
4.Two slip rings are used	4.Two half slip rings are used
4.Every half rotation, the direction of current changes	5. Every half rotation, the direction of current no changes

CHEMISTRY

12.Write the differences between Acids and Bases

Acids	Bases
1.Acids gives H_3O^+ ions in water	1.Bases gives OH^- ions in water
2.Acids are sour in taste	2.Bases are bitter in taste
3.Acids turns blue litmus to red	3.Bases turns red litmus to blue
4.Acids turns methyl orange indicator to red	4.Bases turns methyl orange indicator to yellow
5.Acids turns phenolphthalein indicator to no colour	5.Bases turns phenolphthalein indicator to pink
6.p^H value is less than 7	6. p^H value is greater than 7
7.Acids react with Bases to form salt and water	7. Bases react with Acids to form salt and water
8.Examples of acids are HCl, H_2SO_4,CH_3COOH etc	8.Examples of bases are NaOH,KOH,NH_4OH etc

13.Write the differences between Ionic bond and Covalent bond

Ionic bond	Covalent bond
1.It is formed by transferring of electrons from one atom to another	1.It is formed by sharing of electrons pairs by two atoms
2.It is formed between a metal and a non-metal	2.It is formed between two non-metals
3.Electrostatic	3.Non-electrostatic
4.Ex: NaCl	4.Ex: HCl

14.Write the differences between Ionic compounds and Covalent compounds

Ionic compounds	Covalent compounds
1. It is formed by transferring of electrons from one atom to another	1. It is formed by sharing of electrons pairs by two atoms
2. It is formed between a metal and a non-metal	2. It is formed between two non-metals
3.No definite shape	3.Definite shape
4.High melting point	4.Low melting point
5.High boiling point	5.Low boiling point
6.They are soluble in water	6.They are soluble in water
7.Ionic compounds conduct electricity	7.Covalent compounds do not conduct electricity

15.Write the differences between Roasting and Calcination

Roasting	Calcination
1.Roasting is a pyrochemical process in which the ore is heated in the presence of air	1.Calcination is a pyrochemical process in which the ore is heated in the absence of air
2.Oxidation reaction	2.Decomposition reaction
3.It requires oxygen	3.It doesn't requires oxygen
4.It is suitable to sulphide ores	4.It is suitable to carbonate ores

16.Write the differences between Smelting and Roasting

Smelting	Roasting
1.Smelting is a pyrochemical process in which the ore is mixed with flux and fuel and strongly heated	1. Roasting is a pyrochemical process in which the ore is heated in the presence of air
2. Oxidation reaction	2. Oxidation reaction
3. It requires oxygen	3. It requires oxygen
4.It is suitable to iron, copper ,silver ores	4. It is suitable to sulphide ores
5.Blast furnace is used	5.Reverberatory furnace is used

17.Write the differences between esterification and saponification reactions

Esterification	Saponification
1.Carboxylic acid combines with an alcohol in the presence of little con.H_2SO_4 to form an ester	1.The hydrolysis of an oil under basic conditions leading to formation of sodium salt of carboxylic acid and glycerol
2.This is reversible reaction	2.This is irreversible reaction
3.Examplefor dehydration reaction	3.Example for hydrolysis
4.This is used to prepare different types of esters	4.This is used to prepare soaps or glycerol
5.Acid is catalyst	5.Base is catalyst
6. Requires heat energy	6.Do not requires heat energy

18.Write the differences between Alkanes, Alkenes and Alkynes

Alkanes	Alkenes	Alkynes
1.General formula is $C_n H_{2n+2}$	1. General formula is $C_n H_{2n}$	1. General formula is $C_n H_{2n-2}$
2.Saturated hydrocarbons	2.Unsaturated hydrocarbons	2. Unsaturated hydrocarbons
3.All C-C bonds	3.Atleast one C=C bond	3.Atleast one C≡ C
4. They undergo substitution reactions	4. They undergo addition reactions	4. They undergo addition reactions
5.Simplest Alkane is CH_4	5.Simplest Alkene is $C_2 H_4$	5.Simplest Alkyne is $C_2 H_2$

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