

**MODEL PAPER - 2****GENERAL SCIENCE, Paper – I & II  
(English Version)****Time: 3 Hours 15 Minutes****Maximum Marks: 100****Instructions:**

1. This paper consists of Part-A and Part-B.
2. Part-A contains questions from Physical Science and Part-B contains from Biological Science.
3. Part-A and Part-B contains 4 sections each.
4. There are 33 questions in the paper.
5. There is an internal choice in **Section IV** of Part-A and Part-B.
6. Write all the questions visibly and legibly.
7. 15 minutes are given for reading the question paper.

**PART – A (PHYSICAL SCIENCE)****SECTION I****6 x 1 = 6**

- Notes:** 1. Answer **all** the questions.  
2. Each question carries **1** mark.

1. Give a few applications of Faraday's law of induction in daily life.
2. What happen when an acid or base is mixed with water?
3. Write snell's law?
4. Draw the any one of p-orbital.
5. Fill the table following, which is related to convex lens.

Position of the Object	Position of the Image	Real/Virtual image	Inverted/Erected image	Enlarged/Diminished image
Beyond 2F <sub>2</sub>			Inverted	Diminished
	At 2F <sub>1</sub>	Real		Enlarged

6. Frame any two questions on hybridisation?

**SECTION II****4 x 2 = 8**

- Notes:** 1. Answer **all** the questions.  
2. Each question carries **2** marks.

7. Rajkumar said to you that the magnetic field lines are open and they start at north pole of bar magnet and end at south pole. What questions do you ask Rajkumar to correct him by saying "field lines are closed"?
8. The differentiate electron in an atom has following set of quantum numbers are given, then answer the given question

n	l	m <sub>l</sub>	m <sub>s</sub>
3	0	0	+1/2

- a) Which orbital this electron belongs
  - b) Write the name of the element
9. What is a neutralization reaction? Give two examples
  10. Observe the figure and answer the questions



- a) How many valence electrons are present in Y
- b) How many valence electrons are present in X

**SECTION III****3 x 4 = 12**

- Notes:** 1. Answer **all** the questions.  
2. Each question carries **4** marks.

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11. What is octet rule? How do you appreciate role of the 'octet rule' in explaining the chemical properties of elements?
12. Draw ray diagrams for the Convex lens following positions and explain the nature and position of image.  
a) Object is placed at beyond  $2F_2$                       b) Object is placed at  $2F_2$
13. Observe the table and answer the following questions.

Liquid/Solution	P	Q	R	S	T
pH	7	6	13	2	8

- a) Which solution is strong acid?  
b) Which solution is strong base?  
c) Which solution is weak acid?  
d) Which solution is neutral?

**SECTION IV****3 x 8 = 24**

- Notes:** 1. Answer **all** the questions.  
2. Each question carries **8** marks.  
3. Each question has internal choice.

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14. Explain the formation of rainbow.

**(OR)**

Deduce the expression for the equivalent resistance of three resistors connected in series.

15. Define the modern periodic Law. Discuss the construction of the long form of the periodic table.

**(OR)**

Explain the cleansing action of soap.

16. Explain the procedure of finding specific heat of solid experimentally?

**(OR)**

Suggest an experiment to prove that the presence of air and water is essential for corrosion.

Explain the procedure