

GENERAL SCIENCE, Paper - I

(Physical Science)

(English version)

Parts A and B

Time : 2 hrs. 45 min.]

[Maximum Marks : 40

Instructions :

1. Read the whole Question Paper and understand every question thoroughly without writing anything and 15 minutes of time is allotted for this.
2. Answer the questions under **Part 'A'** on a separate answer book.
3. Write the answers to the question under **Part 'B'** on the Question paper itself and attach it to the answer book of **Part 'A'**.
4. Answer **all** questions from the given three sections - I, II and III of **Part 'A'**.
5. In section - III, every question has internal choice. Answer **any one** alternative.

Part - A

Time : 2 hrs. 15 min.

Marks : 35

SECTION - I

- NOTE :**
- (i) Answer **all** the questions.
 - (ii) Each question carries **ONE** mark.
 - (iii) Write the answers in 1 - 2 sentences.

7×1=7

1. Write any two uses of convex mirror in day to day life.
2. Which molecules of atmosphere act as scattering centres are responsible for the blue sky ?
3. Why do the various micelles present in water do not come together to form a precipitate ? Guess the reason.

4. Mention any two uses of graphite in day to day life.
5. Balance the following chemical reaction.

$$\text{Al} + \text{Fe}_2\text{O}_3 \rightarrow \text{Al}_2\text{O}_3 + \text{Fe}$$
6. What are the essential condition that iron articles get rust ?
7. What happens when a current carrying coil is placed in a uniform magnetic field ?

SECTION - II

- NOTE :** (i) Answer **all** the questions.
 (ii) Each question carries **TWO** marks.
 (iii) Write the answer in 4 - 5 sentences.

6×2=12

8.

High reactivity	Moderate reactivity	Low reactivity
K, Na, Ca, Mg, Al	Zn, Fe, Pb, Cu	Ag, Au

Observe the table and answer the following questions.

- (i) Which of the above metals found even in free state in nature ?
 - (ii) Which of the above metal's ore are concentrated by using magnetic separation ?
9. What happens when magnetic flux passing through a coil changes continuously ? Where does this process is used ?
 10. How do the resistors $6\ \Omega$, $10\ \Omega$ to be connected in a circuit to get minimum resistance ? Find the resultant resistant of the circuit.
 11. Write two examples for ohmic and non-ohmic materials each.

12. Write any four uses of Washing Soda.
13. How do you test the nature of the solution formed by dissolving CaO in water? What is the nature of the solution?

SECTION - III

- NOTE :** (i) Answer **all** the questions. $4 \times 4 = 16$
 (ii) Each question carries 4 marks.
 (iii) There is an internal choice for each question, only one option from each question is to be attempted.
 (iv) Write the answers in 8 to 10 sentences.

14. The radius of curvature of a concave mirror is 6 cm. Draw the ray diagrams for an object placed on principal axis at 8 cm and 4 cm distance from the pole of the mirror.

OR

The focal length of a convex lens is 2 cm. Draw the ray diagram of an object placed on principal axis at the 'C' of lens and at a distance of 3 cm from its optic centre.

15.

Person A	Person B	Person C	Person D	Person E
Maximum focal length of eye is less than 2.5 cm.	Cannot see nearer objects clearly.	Minimum focal length of eye lens is greater than 2.27 cm.	Lost the ability of accommodation of eye.	The limits of the focal length of eye lens are from 2.5 cm–2.27 cm.

Answer the following questions from the above information.

- (i) What is the defect of vision in 'D' suffering from? Why does it happen?
- (ii) Whose defect of vision can be corrected by using Biconcave lens?
- (iii) Who is suffering with similar defect of vision as of 'B'?
- (iv) Who among the above do not have any defect of vision?

OR

OR

Sample Solution	Milk	Gastric Juice	Distilled Water	NaOH solution	Milk of Magnesia	Washing Soda
pH value	6.8	1.2	7	14	10.5	12.6

Answer the following questions by using above information.

- (i) Which of the above is neutral solution ?
- (ii) Which of the above is used to neutralize the acidity in stomach ?
- (iii) Which is the strong acid among the above solutions ?
- (iv) What is the colour of Phenolphthalein indicator in NaOH solution ?

16. List out the material required for the experiment "The effect of increasing of cross-section of a conductor upon its resistance" and write the experimental procedure.

OR

List out the material for the experiment to investigate whether all compounds containing Hydrogen are acids or not and write the experimental procedure.

17. How does Hund's rule helps in writing electronic configuration of an atom ? Explain with a suitable example.

OR

Explain the formation of N_2 molecule using Valence Bond theory.

19E(B)

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(English version)

Parts A and B

Time : 2 hrs. 45 min.]

[Maximum Marks : 40

Instruction : Write the answers to the questions in this **Part-B** on the Question paper itself and attach it to the answer book of **Part-A**.

Part - B

Time : 30 minutes

Marks : 5

NOTE :

- (i) Answer **all** the questions.
- (ii) Each question carries $\frac{1}{2}$ mark.
- (iii) Marks will **not** be awarded in any case of over-written, rewritten or erased answers.
- (iv) Write the CAPITAL LETTER (A, B, C, D) showing the correct answer for the following questions in the brackets provided against them.

1. Eye lens form a image on retina.

[]

- (A) real, inverted
- (B) real, erect
- (C) virtual, inverted
- (D) virtual, erect

2. The percentage of alcohol in absolute alcohol []
(A) 96
(B) 100
(C) 10
(D) 18
3. The functional group of Ketones is []
(A) $-C=O$
(B) $-COOR$
(C) $-CHO$
(D) $-OH$
4. Limestone is an ore of []
(A) Na
(B) Ca
(C) Mg
(D) Al
5. The most electronegative element is []
(A) Cs
(B) He
(C) F
(D) Li

6. Which colour light is produced by Sodium vapours in street light ? []
- (A) Green
(B) Blue
(C) Yellow
(D) Crimson red
7. 'l' value of d - orbital is []
- (A) 0
(B) 2
(C) 3
(D) 1
8. Froth floatation process is used to concentrate impurities of the ore is ... []
- (A) Sulphide
(B) Oxide
(C) Chloride
(D) Hydride
9. Power of a lens is 4D, then the focal length of the lens will be []
- (A) 50 cm
(B) 5 cm
(C) 25 cm
(D) 2.5 cm

10. Which is the linear molecule ?

[]

- (A) BF_3
 - (B) BeCl_2
 - (C) CH_4
 - (D) NH_3
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