This Question Paper contains 4 Printed Pages.

19E(A)

GENERAL SCIENCE, Paper - I

(English version)

Parts A and B

Time : 2½ Hours] **[Maximum Marks : 50**

Instructions :

1. *Answer the questions under **Part-A** on a separate answer book.*
2. *Write the answers to the questions under **Part-B** on the Question Paper itself and attach it to the answer book of **Part-A**.*

Part - A

Time : 2 Hours ***Marks : 35***

SECTION - I *5×2=10*

NOTE :

1. Answer **ANY FIVE** questions, choosing atleast **TWO** from each Group.
2. Each question carries **TWO** marks.

GROUP - A

1. In what cases, does a light ray not deviate at the interface of two media ?

2. What happens to the water when wet clothes dry ?

3. Explain briefly the reason for the blue colour of the sky.

4. Give any two applications of Faraday's law of Induction in daily life.

GROUP - B

5. Why pure acetic acid does not conduct electricity ?

6. What is nl^x method ? How it is useful ?

7. How does metallic character change when we move
(i) across a period from left to right, *(ii)* down a group ?

8. Draw the simple figure of a soap molecule.

SECTION - II

4×1=4

NOTE : 1. Answer **ANY FOUR** questions from the following.

2. Each question carries **ONE** mark.

9. Define Latent heat of Fusion.

10. What is the relationship between focal length *(f)* and radius of curvature (R) ?

11. What is electric shock ?

12. Why do we apply paint on iron articles ?

13. Which group elements are called Carbon family ?

14. Define Isomerism.

SECTION - III

4×4=16

NOTE :

1. Answer **ANY FOUR** questions, choosing atleast **TWO** from each Group.
2. Each question carries **FOUR** marks.

GROUP - A

15. Answer these :

(a) How much energy is transferred when 1 gm of boiling water at 100°C condenses to water at 100°C ?

(b) How much energy is transferred when 1 gm of boiling water at 100°C cools to water at 0°C ?

(c) How much energy is released or absorbed when 1 gm of water at 0°C freezes to ice at 0°C ?

(d) How much energy is released or absorbed when 1 gm of steam at 100°C turns to ice at 0°C ?

16. Draw and explain the process of formation of image with a Pinhole camera.

17. Explain the refraction of light through a glass-slab with neat ray diagram.

18. How do you verify that resistance of a conductor is proportional to the length of the conductor for constant cross-section area and temperature?

GROUP - B

19. How chemical displacement reactions differ from chemical decomposition reaction? Explain with an example for each.

20. Explain Hund's rule with an example.

21. Explain the formation of the BF_3 molecule using hybridisation.

22. Suggest a test to find the hardness of water and explain its procedure.

SECTION - IV

$1 \times 5 = 5$

NOTE :

1. Answer **ANY ONE** of the following questions.
2. This question carries **FIVE** marks.

23. Draw a neat diagram of Electric motor and name the parts.

24. Draw the diagram showing froth floatation method and label its parts.

This Question Paper contains 4 Printed Pages.

19E(B)

GENERAL SCIENCE, Paper - I

(English version)

Parts A and B

Time : 2½ Hours] **[Maximum Marks : 50**

Instructions : *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 : 15***

NOTE : 1. *Answer* ***all*** *the questions.*
2. *Each question carries ½ mark.*
3. *Marks will* ***not*** *be awarded in case of any over-written, re-written or erased answers.*

I. ***Write the CAPITAL LETTERS showing the correct answers for the following questions in the brackets provided against them.*** *20×½=10*

1. Boiling point of water at normal atmospheric pressure ..... [ ]

(A) 0°C (B) 100°C

(C) 110°C (D) −4°C

2. Magnification (m) = ... [ ]

(A) $\frac{v}{u}$ (B) $\frac{u}{v}$

(C) $\frac{h_o}{h_i}$ (D) $\frac{h_i}{h_o}$

3. If an object is placed at 'C' of a concave mirror, the position of the image is ..... [ ]

(A) at infinity.
(B) between F and C.
(C) at C.
(D) beyond C.

4. The refractive index of glass with respect to air is 2. Then the critical angle of glass-air interface is ..... [ ]

(A) 0°
(B) 45°
(C) 30°
(D) 60°

5. Which one of the following materials cannot be used to make lens ? [ ]

(A) Water
(B) Glass
(C) Plastic
(D) Clay

6. During refraction ..... will not change. [ ]

(A) Wavelength
(B) Frequency
(C) Speed of light
(D) All the above.

7. A charge is moved from point A to point B. The work done to move unit charge during this process, is ..... [ ]

(A) Potential at A.
(B) Potential at B.
(C) Current from A to B.
(D) Potential difference between A and B.

8. A thick wire has a ..... resistance than thin wire. [ ]

(A) more
(B) less
(C) equal
(D) A and B.

9. Which converts mechanical energy into electrical energy ? [ ]

(A) Motor (B) Battery
(C) Generator (D) Switch

10. The SI unit of magnetic field induction is ..... [ ]

(A) Tesla (B) Weber
(C) Weber/m (D) Weber . m

11. $C_6H_{12}O_6 \rightarrow C_2H_5OH + CO_2$ is ..... chemical reaction. [ ]

(A) combination (B) decomposition
(C) displacement (D) double decomposition

12. ..... is used for treating indigestion. [ ]

(A) antibiotic (B) analgesic
(C) antacid (D) antiseptic

13. Colour of Methyl orange in alkali condition is ..... [ ]

(A) orange (B) yellow
(C) red (D) blue

14. The maximum number of electrons present in K shell are .... [ ]

(A) 2 (B) 4
(C) 6 (D) 8

15. The value of Planck's constant is ..... [ ]

(A) 6.023×10^{-34} Js (B) 6.626×10^{34} Js
(C) 6.626×10^{-36} Js (D) None

16. Number of elements present in Period 1 are ..... [ ]

(A) 2 (B) 4
(C) 6 (D) 8

17. Which of the following elements is electronegative? [ ]

(A) Sodium (B) Oxygen
(C) Magnesium (D) Calcium

18. The bond angle in Methane ..... [ ]

(A) 104°31′ (B) 107°48′
(C) 180° (D) 109°28′

19. The reducing agent in Thermite process is ..... [ ]

(A) Al (B) Mg

(C) Fe (D) Si

20. Which one of the following hydrocarbons can show isomerism ? [ ]

(A) C_2H_4 (B) C_2H_6

(C) C_3H_8 (D) C_4H_{10}

II. ***Fill in the blanks with suitable answers. Each question carries ½ mark.*** $5\times½=2½$

21. The geometric centre of mirror is .....

22. At critical angle of incidence, the angle of refraction is .....

23. The lens which can form real and virtual images is .....

24. The kilowatt hour is the unit of .....

25. Faraday's law of induction is the consequence of .....

III. ***Match the following. Each question carries ½ mark.*** $5\times½=2½$

Group - A		***Group - B***
26. Plaster of Paris	[ ]	(A) Na_2CO_3
27. Gypsum	[ ]	(B) $NaHCO_3$
28. Bleaching powder	[ ]	(C) Na_2HCO_2
29. Baking Soda	[ ]	(D) $CaSO_4 \cdot \frac{1}{2}H_2O$
30. Washing Soda	[ ]	(E) $CaOCl_2$
		(F) $CaCl_2 \cdot 2H_2O$
		(G) $CaSO_4 \cdot 2H_2O$