# CLASS-10     GENERAL SCIENCE , Paper – I     S.A.-2

(Physical Sciences)

(English Version)

**Time: 3 Hours**     **Parts A and B**     **Maximum Marks : 50**

**Instructions :**

1. The Question paper contains 4 printed pages in Part-A and also in Part-B.
2. ½ hour is allotted for reading the question paper.
3. Answer the questions under Part-A on a separate answer booklet.
4. Write the answers to the questions under Part-B on the question paper itself and attach it to the answer booklet of Part-A.

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**Time : 2 hours**     **PART-A**     **Max. Marks : 35**

**Section - I**     5 x 2 = 10

**Note :**

1. Answer any five questions choosing at least two from each group.
2. Each question carries two marks.

## Group -A

**1.** Write the differences between *evaporation* and *boiling*.

**2.** What happened when a light ray travels from denser medium to rarer medium?

Explain with a neat diagram.

**3.** Write the lens maker's formula and explain the terms in it.

**4.** Explain why the sky appears blue in colour.

## Group -B

**5.** Write the components in the following alloys.

(i) Brass      (ii) Bronze

**6.** Comment on the position of Helium in modern periodic table.

**7.** Explain the formation of $BeCl_2$ molecule with a neat diagram.

**8.** Electron does not enters 3d orbital after filling 3p orbital. It occupies

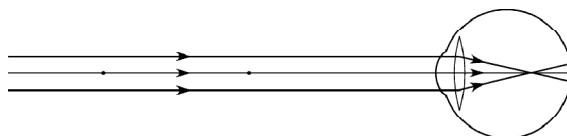4s orbital first and then it enters in to 3d orbital. Why?

<center>**Section - I I**                                      4 x 1 = 4</center>

**Note :**

      1.  Answer any four questions from the following.

      2.  Each question carries one mark.

 **9.** Define fog.

**10.** Write about magnification.

**11.** What can we do to correct the following eye defect.



**12.** How can we prevent rancidity?

**13.** What is the $p^H$ value for distilled water?

**14.**  State Hund's law of maximum multiplicity.

<center>**Section - III**                                      4 x 4 = 16</center>

**Note :**

      1.  Answer any four questions choosing at least two from each group.
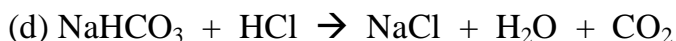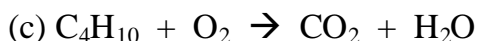
      2.  Each question carries four marks.
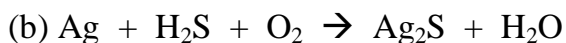
<center>**Group -A**</center>

**15.** What is thermal equilibrium? If we mix 100 ml of water at $90^oC$ to 200 ml

of water at $60^oC$. Then find the temperature of the system at thermal equilibrium?

**16.** Explain the process of making solar cooker with a neat diagram.

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

**18.** Draw the ray diagrams to obtain images of objects for the following conditions for given lens/mirrors. Also write the characteristics of images.

    (i) Object is placed between centre of curvature and optical centre, on the principal axis in front of a convex lens.

    (ii) Object is placed at centre of curvature, on the principal axis in front of a concave lens.

## Group -B

**19.** Balance the following chemical equations.

    (a) $H_2SO_4 + NaOH \rightarrow Na_2SO_4 + H_2O$

    (b) $Ag + H_2S + O_2 \rightarrow Ag_2S + H_2O$

    (c) $C_4H_{10} + O_2 \rightarrow CO_2 + H_2O$

    (d) $NaHCO_3 + HCl \rightarrow NaCl + H_2O + CO_2$

**20.** Write any two chemical properties of acids and bases. Give examples.

**21.** Write the differences between sigma bond and pi bond.

**22.** Define the following terms.

    (a) atomic radius        (b) ionization energy

    (c) electron affinity     (d) electro negativity

<div align="center">

**Section - IV**           1 x 5 = 5

</div>

**Note :**

    1.  Answer any one question from the following.

    2.  Each question carries five marks.

**23.** Draw the different types of mirrors and lenses (at least eight).

**24.** Draw the shapes of five d- orbitals.

# CLASS-10 GENERAL SCIENCE , Paper – I S.A.-2

(Physical Sciences)

(English Version)

**Time: 3 Hours** **Parts A and B** **Maximum Marks : 50**

**Instructions :**

5. ½ hour is allotted for reading the question paper.
6. Answer the questions under Part-A on a separate answer booklet.
7. Write the answers to the questions under Part-B on the question paper itself and attach it to the answer booklet of Part-A.

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## PART-B

This Question paper contains 4 printed pages.

Attach **Part-B** question paper to the main answer booklet of **Part-A**.

**Time : ½ hours** **Marks : 15**

**Instructions :**

1. Answer **all** questions.
2. Each question carries ½ marks.
3. Answers are to be written in the question paper only.
4. Marks will not be awarded in case of any overwriting and rewriting or erased answers.

**I.** Write the 'CAPITAL LETER' showing the correct answer for the following questions in the brackets provided against them. **20 x ½ = 10**

**1.** The amount of water vapour present in air is called [ ]

(A) fog (B) haze

(C) humidity (D) mist

**2.** Relation between power of lens and focal length of the lens is [ ]

(A) $P = \dfrac{1}{f \ (in \ cm)}$ (B) $P = \dfrac{100}{f \ (in \ cm)}$

(C) $P = \dfrac{10}{f \ (in \ m)}$ (D) $P = \dfrac{1}{f \ (in \ m)}$

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**3.** A ray which seems to be travelling through the focus of a convex mirror, moves …………. After reflection.　　[　]

　(A)　parallel to the axis

　(B)　along the same path in opposite direction

　(C)　through Focus

　(D)　through Centre of curvature

**4.** This is not example for refraction　　[　]

(A) 　(B) 　(C) 　(D) 
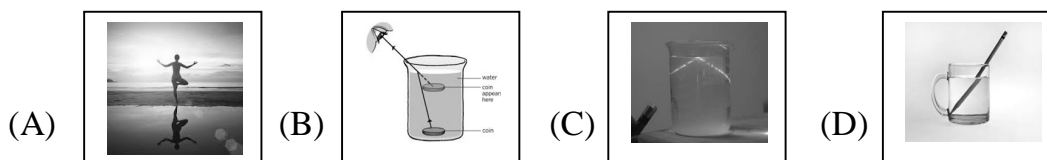
**5.** Find the place of image as per the given figure.　　[　]
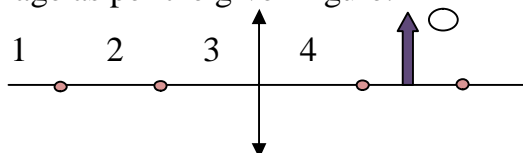


　(A)　4　　　　　　　　　　　(B)　2

　(C)　3　　　　　　　　　　　(D)　1

**6.** "If I hold it in my hand, it will melt." Said Mendeleeff. What is it?　　[　]

　(A)　Silicon　　　　　　　　(B)　Gallium

　(C)　Germanium　　　　　　(D)　Scandium

**7.** "The least energy orbitals are filled first." – This was stated by　　[　]

　(A)　Aufbau　　　　　　　　(B)　Hund

　(C)　Pauli　　　　　　　　　(D)　Sommerfeld

**8.** Green coating on copper articles was formed due to formation of ……[　]

　(A)　$CuO$　　　　　　　　　(B)　$Cu_2O$

　(C)　$CuCO_3$　　　　　　　(D)　$Cu_2S$

**9.** Adding water to quick lime is an ………………reaction.　　[　]

　(A)　Exothermic　　　　　　(B)　Endo thermic

　(C)　Photo chemical　　　　(D)　Electro chemical

**10.** The element in $3^{rd}$ period and in $13^{th}$ group is …………..　　[　]

　(A)　Scandium　　　　　　　(B)　Germanium

　(C)　Gallium　　　　　　　　(D)　Phosphorous

11. …………………….group elements are called Chalcogens.                    [      ]

    (A)   14                        (B)   15

    (C)   17                        (D)   16

12. Boron tri fluoride ($BF_3$) has ……………………… shape.                    [      ]

    (A)   Triangular               (B)   Pyramidal

    (C)   Linear                   (D)   Tetrahydral

13. The total number of electrons can be placed in L-shell is ………                    [      ]

    (A)   2                         (B)   32

    (C)   8                         (D)   18

14. …………… sigma bonds present in Hydrogen cyanide (H-CN)                    [      ]

    (A)   1                         (B)   2

    (C)   3                         (D)   4

15. Valence electronic configuration of copper is ………………….                    [      ]

    (A)   $4s^1 3d^5$                (B)   $4s^2 3d^4$

    (C)   $4s^1 3d^{10}$            (D)   $4s^2 3d^9$

16. Optical fiber works on …………….. principle                    [      ]

    (A)   Reflection              (B)   Refraction

    (C)   Total internal reflection    (D)   Dispersion

17. Which of the following has magnification value "1"                    [      ]

    (A)   Plane mirror          (B)   Concave mirror

    (C)   Convex mirror       (D)   None of these

18. Boiling point of water is ……………………K                    [      ]

    (A)   100                      (B)   273

    (C)   300                     (D)   373

19. ……………… The warming process                    [      ]

    (A)   Evaporation           (B)   Boiling

    (C)   Melting                (D)   Condensation

20. ………. …… are used as reflectors in Head lights of vehicles                    [      ]

    (A)   Convex mirror       (B)   Concave mirror
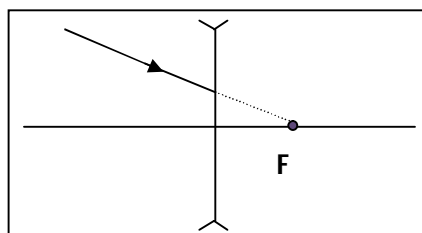
    (C)   Plane mirror         (D)   Glass Plate

**II.** Fill in the following blanks with suitable answers.          5 x ½ = 2½
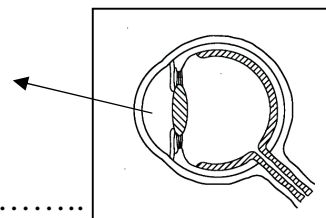
Each question carries ½ marks.

**21.** …………………….. transfer from a body at higher temperature to

a body at lower temperature.

**22.** s-specific heat, Q-amount of heat, m-mass of the body, $\Delta T$- difference in

temperature. Then Q = …………………………..

**23.** Complete the refracted ray in the diagram.



**24.** The distance between Pole and Centre of curvature of a lens/mirror is called

……………………………



**25.** Identify the part shown in the figure**:**…………………..

**III.** Match the following by writing the letter of the correct answer in the brackets,

choosing from **Group-B**.          5 x ½ = 2½

Each question carries ½ marks.

| **(i)** | **Group-A** | | | | **Group-B** |
|---|---|---|---|---|---|
| **26.** | Bleaching powder | [ | ] | (G) | $CaSO_4. 2H_2O$ |
| **27.** | Washing soda | [ | ] | (H) | $NaHCO_3$ |
| **28.** | Plaster of Paris | [ | ] | (I) | $CaSO_4. ½ H_2O$ |
| **29.** | Baking soda | [ | ] | (J) | $Na_2CO_3$ |
| **30.** | Gypsum | [ | ] | (K) | $CaOCl_2$ |
| | | | | (L) | $CuSO_4. 5H_2O$ |