

**CLASS-10**

**GENERAL SCIENCE , Paper – I**

**S.A.-2**

(Physical Sciences)

(English Version)

**Time: 3 Hours**

**Parts A and B**

**Maximum Marks : 50**

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**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. If you are chilly outside the shower stall, why do you feel warm after the bath if you stay in bathroom?
2. An object 4cm in size is placed at 25cm in front of a concave mirror of focal length 15cm. At what distance from the mirror would a screen be placed in order to obtain a sharp image? Find the nature and the size of the image?
3. Why does a diamond shine more than a glass piece cut to the same shape?
4. SreeKanth wear a spectacles and his eyes observed to be bigger in size.
  - i). What is the lens used by him?
  - ii). What type of eye defect he is? Draw the ray diagram?

**Group -B**

5. What do you meant by corrosion? How can you prevent it?
6. Fresh milk has a pH of 6. How does the pH change as it turns to curd? Explain your answer?

7. An element X belongs to 3<sup>rd</sup> period and group 2 of the periodic table. State
- The no. of valence electrons
  - The valence
  - Whether it is metal or a non-metal.
8. Why does Sodium always form a cation where as Fluorine atom always forms an anion?

**Section - II**

4 x 1 = 4

**Note :**

- Answer any four questions from the following.
  - Each question carries one mark.
9. Obhama told that M shell is bigger size than L shell. Which quantum number gives this information?
10. What are the mirrors used in car head lights? Why should it be placed in order to get parallel beam?
11. A is in thermal equilibrium with B and B is in thermal equilibrium with C. If the temperature of A is 40<sup>o</sup>, then what is the temperature of C in Kelvin?
12. Anusha observed apples, banana change their colour when they cut and expose to air. What is the reason?
13. Write the lens makers formula and explain the terms in it?
14. The electron configuration of an atom is 2, 8, 7. Whether it forms anion or cation? Why?

**Section - III**

4 x 4 = 16

**Note :**

- Answer any four questions choosing at least two from each group.
- Each question carries four marks.

**Group -A**

15. Suggest an experiment to prove that the rate of evaporation of a liquid depends on its surface area and vapour already present in surrounding air.
16. Make a solar heater/cooker and explain the process of making?

17. How do you appreciate the coincidence of the experimental facts with the results obtained by a ray diagram in terms of behaviour of images formed by lenses?
18. Teacher ask a question to Dismika, How do you produce the rainbow by using the some simple objects. Help to Dismika how she produce rainbow in the class room and explain the procedure?

**Group -B**

19. Write the types of chemical reactions with examples?
20. Compounds such as alcohols and glucose contain hydrogen but are not categorized as acids. Describe an activity to prove it?
21. Collect the information about the reactivity of VIIIA group elements from internet or from your school library and prepare a report on their special character when compared to other elements of periodic table?
22. Explain the formation  $N_2$  molecule using valence bond theory?

**Section - IV**

1 x 5 = 5

**Note :**

1. Answer any one question from the following.
  2. Each question carries five marks.
23. Draw a ray diagram for the following situation and explain the nature and position of the image.
    - a). Object is placed at  $C_2$
    - b). Object is placed between  $F_2$  and optic centre p.
  24. Draw the diagram showing the chart of sequence of filling up of electrons in to an orbital?

**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.

**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 LETTER’ showing the correct answer for the following questions in the brackets provided against them. **20 x ½ = 10**

1. Specific heat of a water is..... [     ]

- A). 1 Cal/g<sup>o</sup>-c     B). 1.15 Cal/g<sup>o</sup>-c     C). 1.25 Cal/g<sup>o</sup>-c     D). 1.35 Cal/g<sup>o</sup>-c

2. Condensation is the reverse process of ..... [     ]

- A). Boiling     B). Evaporation     C). Melting     D). None

3.  $2\text{AgCl}_{(s)} \xrightarrow{\text{Sunlight}} \text{_____} + \text{Cl}_2$  [     ]

- A).  $2\text{Ag}_{(l)}$      B).  $2\text{Ag}_{(s)}$      C).  $2\text{Ag}_{(g)}$      D).  $2\text{Ag}_{(aq)}$

4. The spoilage of food can be prevented by adding preservatives like \_\_\_and \_\_\_\_\_. [     ]  
A). Vitamin C&A    B). Vitamin C&E    C). Vitamin C&K    D). Vitamin C&B
5. In a concave mirror all normals are converge towards a point is called..... [     ]  
A). Pole                    B). Focal point        C). Centre of curvature D). Radius of curvature
6. Magnification,  $m=.....$  [     ]  
A).  $\frac{-v}{u}$                     B).  $\frac{v}{u}$                     C).  $\frac{u}{v}$                     D).  $\frac{-u}{v}$
7. The substance present in antacid tablets is..... [     ]  
A).  $Mg(OH)_2$         B).  $Ca(OH)_2$         C).  $Ba(OH)_2$         D).  $Mg(OH)_2$
8. The chemical formula of a gypsum is ..... [     ]  
A).  $CaSO_2 \cdot 2H_2O$     B).  $BaSO_4 \cdot 2H_2O$     C).  $CaSO \cdot 2H_2O$     D).  $CaSO_2 \cdot 2HO$
9. A solution turns red litmus to blue, its  $p^H$  is likely to be..... [     ]  
A). 1                    B). 4                    C). 5                    D). 10
9. A solution turns red litmus to blue, its  $p^H$  is likely to be..... [     ]  
A). 1                    B). 4                    C). 5                    D). 10
10. The distance between the parallel rays in a glass slab is ..... [     ]  
A). Lateral Shift    B). Vertical shift    C). Thickness        D). Length
11. The colour of silver bromide exposed to air is ..... [     ]  
A). Block                B). Yellow                C). Red                    D). Green
12. The blue of the sky is due to..... [     ]  
A). Dispersion        B). Scattering        C). Reflection        D). Refraction
13. During the refraction \_\_\_\_\_will not change. [     ]  
A). Wave length    B). Frequency        C). Speed of light    D). All

14. The shape of P-Orbital is.... [     ]  
A). Spherical     B). Dumbell     C). Double dumbell     D). Forefold
15. Modern periodic law was introduced by... [     ]  
A). Bohr     B). Sommerfeld     C). J.J Thomson     D). Mosley
16. Neon belongs to..... [     ]  
A). Carbon family     B). Halogen     C). Boran family     D). Noble gas
17. If the nuclear charge increases the ionization potential ..... [     ]  
A). Decreases     B). Remains same     C). Increases     D). Does not change
18. An element forms a chloride  $ACl_4$  the number of electrons in the valency shell of "A". [     ]  
A). 1     B). 2     C). 3     D). 4
19. The refractive index of a glass relative to water is  $\frac{9}{8}$ . The refractive index of a water relative to glass is ..... [     ]  
A).  $\frac{7}{8}$      B).  $\frac{8}{9}$      C).  $\frac{-9}{8}$      D).  $\frac{-7}{8}$
20. Which of the following is a strong acid? [     ]  
A). NaCl     B). NaOH     C).  $CH_3COOH$      D). HCl

II. Fill in the following blanks with suitable answers.

$$5 \times \frac{1}{2} = 2\frac{1}{2}$$

Each question carries  $\frac{1}{2}$  marks.

21. Mirror formula is \_\_\_\_\_
22. Doctor advised to Kajal use a 3D lens. What is the focal length of the lens \_\_\_\_\_
23. Nelson Mandela un able to see the distant object and closer object. So he suffers from \_\_\_\_\_
24. VSEPR was proposed by \_\_\_\_\_ and \_\_\_\_\_
25. The value of Planck's constant is \_\_\_\_\_

**III.** Match the following by writing the letter of the correct answer in the brackets, choosing from **Group-B**.  $5 \times \frac{1}{2} = 2\frac{1}{2}$

Each question carries  $\frac{1}{2}$  marks.

<b>(i)</b>	<b>Group-A</b>		<b>Group-B</b>
	26. $\text{BF}_3$	[    ]	A. $\text{CH}_3\text{COOH}$
	27. VIBGYOR	[    ]	B. Humidity
	28. Blue of the sky	[    ]	C. $120^\circ$
	29. Weak Base	[    ]	D. Dispersion
	30. Water molecules in the air	[    ]	E. Scattering
			F. $180^\circ$
			G. NaOH