

BOARD OF SECONDARY EDUCATION (AP)
SUMMATIVE ASSESSMENT – III
TENTH CLASS GENERAL SCIENCE
PHYSICAL SCIENCE MODEL PAPER
PAPER – I (ENGLISH VERSION)

Time: 2 hrs. 45 mins.

PART – A & B

Maximum Marks: 40

INSTRUCTIONS:

- i) In the time duration of 2 hrs. 45 mins. 15 minutes of time is allotted to read and understand the question paper.
- ii) Answer the questions under PART – A on a separate answer book.
- iii) Write the answers to the questions under PART – B on the question paper itself and attach it to the answer book of PART – A.

Time: 2 hrs.

PART – A

Marks: 30

SECTION – I

INSTRUCTIONS:

- i) Answer ALL the questions.
 - ii) Each question carries ONE Mark.
 - iii) Write the answers in 1 – 2 sentences. $4 \times 1 = 4$
1. Draw the diagram showing the magnetic field lines of a bar magnet.
 2. Why is the second ionization energy is more than the first ionization energy for any element?
 3. Why dough rises, swells, when it is treated with yeast?
 4. Among objects made of glass and diamond, which one shines more why?

SECTION – II

INSTRUCTIONS:

- i) Answer ALL the questions.
 - ii) Each question carries TWO Marks.
 - iii) Answer the questions in 4 – 5 sentences. $5 \times 2 = 10$
5. Write two uses of fibre optics in daily life.
 6. Explain with the help of a chemical equation, how an addition reaction is used in vegetable ghee industry?
 7. Why Dobereiner, Newlands and Mendeleev were not 100% successful in the classification of elements? Why the modern table is relatively a better classification? Predict the reason.
 8. Least distance of distinct vision of a person is observed as 35 cm. What lens is useful for him to see his surroundings clearly? Why?
 9. Draw the structure of the methane molecule. Write its bond angle.

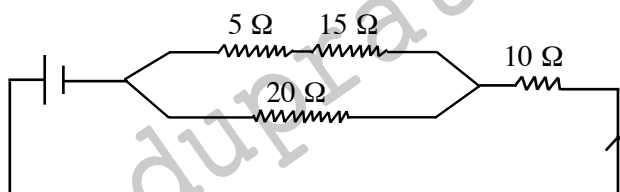
SECTION - III

INSTRUCTIONS:

- i) Answer ALL the questions.
 - ii) Each question carries FOUR Marks.
 - iii) There is Internal Choice for each question only one option from each question is to be attempted.
 - iv) Answer each question in 8 – 10 sentences. 4 × 4 = 16
10. Explain the process of melting and latent heat of fusion.

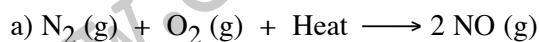
(OR)

The resistances of 5 Ω, 15 Ω, 20 Ω and 10 Ω are connected as shown in the circuit. Find the resultant resistance of the circuit.



11. State the methods used for the purification of crude metals. Explain in which context these methods are used.

(OR)



What information do you get from the above equation? Comment.

- b) Write an activity about how you conduct an experiment to show that more reactive metals replace less reactive metals from their compounds.

12. What are the factors affecting the resistance of an electric conductor? Explain any two factors.

(OR)

Raghu conducted an experiment with a concave mirror and got the data as given in the table.

S.No.	Object distance 'u'	Image distance 'v'
1.	60 cm	60 cm
2.	50 cm	70 cm
3.	40 cm	80 cm
4.	30 cm	infinity
5.	20 cm	25 cm
6.	10 cm	15 cm
7.	> 60 cm	50 cm

Answer the following questions:

- a) Find the magnification of image formed in S.No. 1 and 4.
- b) What is the difference between the nature of images formed in S.No. 2 and 5.
- c) In which S.No. diminished image is formed?
- d) What are the values of radius of curvature and focal length of the mirror?

13. a) What are the various possible structural formulae of a compound having molecular formula C_3H_6O ?
b) Give the IUPAC names of the above possible compounds and represent them in structures.
c) What is the similarity in these compounds?

(OR)

Without knowing the electronic configurations of the atoms of elements Mendeleev still could arrange the elements nearly close to the arrangement in the Modern Periodic Table. How can you appreciate this?

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INSTRUCTIONS:

- i) Answer ALL the questions.
 ii) Each question carries $\frac{1}{2}$ Mark.
 iii) Answers are to be written in question paper only.
 iv) Marks will not be awarded in any case of over writing and rewriting or erased answers.
 v) Write the CAPITAL LETTER (A, B, C, D) showing the correct answer for the following questions in the brackets provided against them. $20 \times \frac{1}{2} = 10$

14. Which substance in the following in its aqueous solution reacts with carbonate to give a gas that turns lime water milky?

- A) HCl B) Na_2CO_3 C) KMnO_4 D) CuSO_4

15. Match the following.

- | | |
|-------------------------|------------------------------|
| 1) Mirage | P) Dispersion of light |
| 2) Blueness of sky | Q) Refraction |
| 3) Bending of light ray | R) Scattering of light |
| 4) Rainbow | S) Total internal reflection |

A) 1 – P, 2 – Q, 3 – R, 4 – S

B) 1 – Q, 2 – P, 3 – R, 4 – S

C) 1 – S, 2 – R, 3 – Q, 4 – P

D) 1 – R, 2 – P, 3 – Q, 4 – S

16. The focal length of the Plano Convex lens is $2R$. Where 'R' is the radius of curvature of surface. Then the refractive index of the material of the lens is

- A) $\frac{1}{2}$ B) 2 C) $\frac{3}{2}$ D) $\frac{2}{3}$

17. Match the following.

Atomic number**Element**

- | | |
|-------|--------------|
| 1) 19 | P) Chlorine |
| 2) 13 | Q) Potassium |
| 3) 17 | R) Neon |
| 4) 10 | S) Aluminium |

A) 1 – P, 2 – Q, 3 – R, 4 – S

B) 1 – Q, 2 – S, 3 – P, 4 – R

C) 1 – Q, 2 – P, 3 – R, 4 – S

D) 1 – S, 2 – Q, 3 – P, 4 – R

18. Choose the correct option.

i) Corrosion of iron is commonly known as rusting.

ii) Corrosion of iron occurs in the presence of water and air.

A) i is correct

B) ii is correct

C) Both i and ii are correct

D) both i and ii are wrong

19. The equivalent resistance due to series connection of $10\ \Omega$ and $10\ \Omega$ resistors is
A) $5\ \Omega$ B) $0\ \Omega$ C) $10\ \Omega$ D) $20\ \Omega$
20. Which one is not an application of electromagnetic induction?
A) ATM Card B) Tape Recorder
C) Calling Bell D) Induction Stove
21. Spherical fullerenes are also called as
A) Melanoma B) Bucky balls
C) Graphene D) Tetrahedral molecule
22. Electronic configuration of Aluminium
A) $1s^2\ 2s^2\ 2p^6\ 3s^2$ B) $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^3$
C) $1s^2\ 2s^2\ 2p^6$ D) $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^1$
23. In the formula $Q = ms\Delta t$, 's' is
A) mass B) change in temperature
C) specific heat D) heat energy
24. Magnetic field is produced by the flow of current in a straight wire. This was discovered by
A) Oersted B) Maxwell C) Faraday D) Gauss
25. A rectangular coil of copper wire is rotated in a magnetic field. The direction of the induced current changes once in each
A) One revolution B) One fourth revolution
C) Half revolution D) Two revolutions
26. Find odd one among the following.
A) pH = 2 B) pH = 4 C) pH = 6 D) pH = 9
27. S.I. unit of specific heat
A) Cal/g °C B) J/kg – K C) Cal D) Cal/ °C
28. This mirror forms lateral inversion in the image of an object.
A) Plane B) Convex C) Concave D) Spherical
29. If 'C' is the velocity of light in vacuum and 'V' is its velocity in a medium then the refractive index (n) of the medium is
A) CV B) C + V C) $\frac{C}{V}$ D) $\frac{V}{C}$
30. If 2D is the power of lens, then its focal length is
A) 100 cm B) 50 cm C) 200 cm D) 25 cm
31. An emission spectrum consists of bright spectral lines on a dark background. Which one of the following does not correspond to the bright spectral lines?
A) Frequency of emitted radiation
B) Wavelength of emitted radiation
C) Energy of the emitted radiation
D) Velocity of light

32. 3 V, 4 V, 5 V, 6 V batteries are connected in series then the resultant potential is
A) 7 V B) 6 V C) 11 V D) 18 V
33. Soaps do not create water pollution because
A) Soaps are insoluble in water
B) Soaps are synthetic
C) Soaps are 100% bio-degradable
D) Soaps are non-biodegradable

PART - B

ANSWERS

14-A; 15-C; 16-C; 17-B; 18-C; 19-D; 20-D; 21-B; 22-D; 23-C; 24-A; 25-C; 26-D; 27-B; 28-A; 29-C; 30-B; 31-D; 32-D; 33-C.

Writer: C.V. Sarveswara Sarma