ANDHRA PRADESH – SSC EXAMINATIONS - MARCH – 2017

IGNITE PHYSICS TARGET MODEL PAPER - 02

GENERAL SCIENCE , Paper – I

(Physical Sciences)

Time: 2 Hours 45 Min. **Parts A and B** **Maximum Marks : 40**

PART-A **Max. Marks : 30**

Section - I 4 x 1 = 4 Marks

1. Find the length of a conductor which is moving with 20 m/s in the direction perpendicular to the direction of magnetic field of induction 0.6 T, if it induces an e.m.f. of 8V between the ends of the conductor.

2. Which gas is liberated when a piece of sodium is dropped in Ethanol ? Guess.

3. Observe the following table.

Name of the Mineral	Formula	Name of the Mineral	Formula	Name of the Mineral	Formula
Bauxite	$Al_2O_3.2H_2O$	Rock salt	$MgCO_3$	Lime stone	$CaCO_3$
Magnasite	$MgCO_3$	Zincite	NaCl	Zinc blende	ZnS

Now answer the following.

(i) List out the oxide minerals.

(ii) One of the above mineral can be concentrated by froth flotation. What is it ?

4. Write a brief note to appreciate the role of fuse in our house hold circuits.

Section - II 5 x 2 = 10 Marks

5. Write the differences between ohmic and non ohmic conductors.

6. Explain aufbau principle with an example.

7. Write a brief note on magnetic separation method to concentrate ore.

8. Imagine what changes may come in the formation of image, if the size of hole of a Pin hole camera increases. Why ?

9. How can you appreciate the role of Esters in our daily life ?

Section - III 4 x 4 = 16 Marks

10. How do the following properties change in a group and period ? Explain.

(a) Atomic radius (b) Ionization energy (c) Electron affinity (d) Electro negativity.

(OR)

BF_3 molecule has planar triangular shape. Explain the formation of BF_3 molecule by using Hybridisation concept.

11. Observe the following table.

Name of the Material	Specific heat value (in cal/gm-^oC)	Name of the Material	Specific heat value (in cal/gm-^oC)
Brass	0.092	Ice	0.500
Mercury	0.033	Kerosene	0.500
Water	1.000	Aluminium	0.210

Now answer the following.

(i) Which liquid has more specific heat value ?

(ii) Brass vessels are preferable to make cooking vessels. Why ?

(iii) Which liquids have same specific heat value ?

(iv) If we provide same amount of heat energy, which takes more time to raise its temperature for 1^oC either Ice or Water ?

(OR)

Observe the following table.

Name of the Material	Refractive index value	Name of the Material	Refractive index value
Air	1.0003	Kerosene	1.44
Ice	1.31	Benzene	1.50
Water	1.33	Diamond	2.42

Now answer the following.

(i) Which material has less critical angle ?

(ii) In which of the above media, the speed of light is maximum ?

(iii) An air babool present in Kerosene. What is its behavior ?
(Either convex lens or concave lens ?)

(iv) Which is Optically denser medium ? Either Water or Kerosene ?

12. Suggest an experiment to produce a rainbow in your classroom and explain the procedure. Write any one precaution to be followed while doing this experiment.

(OR)

Describe an activity to verify whether acids conduct electricity. Write any two precaution to be followed while doing this experiment.

13. Draw ray diagrams for the following positions and explain the nature and position of image.
i) Object is placed at C_2 of a convex lens
ii) Object is placed at C_2 of a concave lens

(OR)

Which method is used for decomposition of water. Draw a neat diagram that represent that method. Label the parts.

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PART-B **Maximum Marks : 10**

Section - IV **20 x ½ = 10** Marks

14. Magnification of a mirror (m) = …….. [ ]

(A) $\frac{h_o}{h_i}$ (B) $\frac{-h_i}{h_o}$ (C) $\frac{-v}{u}$ (D) $\frac{u}{v}$

15. If an object is placed at 60 cm distance from the pole of a convex mirror, where should be the image formed ? (f = 20 cm) [ ]

(A) Between 'F' and 'P' (B) Beyond 'C'

(C) Between 'F' and 'C' (D) At 'C'

16. P : If the angle of refraction is 90^o then the incident angle is Critical angle

Q : At Critical angle, Total internal reflection takes place

Choose the correct option : [ ]

(A) P - True, Q - True (B) P - True, Q - False

(C) P - False, Q - True (D) P - False, Q - False

17. (i) Reflection (ii) Refraction (iii) Total internal reflection (iv) Dispersion

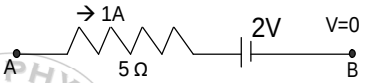
Which of the above concepts involve in the formation of a rainbow in sky ?

Choose the correct answer : [ ]

(A) (ii) and (iv) Only (B) (ii) and (iii) Only

(C) (i) , (ii) and (iv) (D) (ii), (iii) and (iv)

18. In the given figure, the potential at A is ……. When the potential at B is zero. [ ]



(A) 5 V (B) 7 V (C) 3.5 V (D) 2 V

19. The value of Planck's constant (h) = ……. [ ]

(A) 6.67 x 10^{-11} JS (B) 6.262 x 10^{-34} JS

(C) 6.62 x 10^{-11} JS (D) 6.626 x 10^{-34} JS

20. Which orbital has high energy [ ]

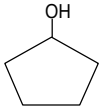
(A) 7s (B) 4f (C) 5d (D) 6p

21. …….. furnace is used for the process of Smelting. [ ]

(A) Blast furnace (B) Reverbaratory furnace

(C) Retart furnace (D) Open hearth furnace

22. IUPAC name of the given structure.



Choose the correct answer : [ ]

(A) Pent, an, 1-al (B) Pent, an, 1-ol

(C) cyclo, pent, an, 1-ol (D) cyclo, pent, an, 1-al

23. Match the following:

Set-I	Set-II (Functional group)
(i) Ester	(a) -OH
(ii) Carboxyic acid	(b) -COOH
(iii) Alcohol	(c) -COOR

Choose the correct answer : [ ]

(A) (i)-a, (ii)-b, (iii)-c (B) (i)-a, (ii)-c, (iii)-b

(C) (i)-c, (ii)-b, (iii)-a (D) (i)-b, (ii)-c, (iii)-a

24. While Jet plane is moving in the Sky, a white colour path like smoke appears. After some time it disappears. (Jet plane's fuel burns and releases water vapour)

What is the reason for white colour smoke ? [ ]

(A) Evaporation (B) Condensation (C) Melting (D) Freezing

25. A substance 'P' is taken in a test tube and heated up. The liberated gas sent in to lime solution. It turns in to milk white colour.
Guess the substance 'P'. [ ]

(A) $CaCO_3$ (B) Na_2CO_3
(C) $CaCO_3$ and Na_2CO_3 (D) $CuSO_4$

26. Identify the true statement [ ]

(A) The focal length of a convex lens doesn't change in water
(B) Lens is a transparent substance having at least one curved surface
(C) Bi convex lens and Bi concave lens both are called converging lenses
(D) The focal length of a convex lens decreases in water

27. If we Connect the terminals of a coil to sensitive Galvanometer. Push a bar magnet towards the coil whose north pole is facing towards the coil. Then …… [ ]

(A) Needle in Galvanometer deflects
(B) Needle in Galvanometer doesn't deflect
(C) We can't say
(D) Data is insufficient

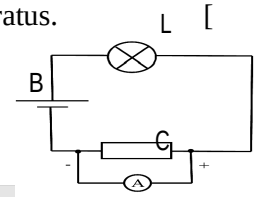
28. A small amount of copper is taken in a porcelain cup. Heated with spirit lamp. Then you observe …….. [ ]

(A) Copper turns in to red colour (B) Copper turns in to green colour
(C) Copper turns in to black colour (D) Copper turns in to blue colour

29. Iron nail doesn't get rust in the presence of dry air. To prove this statement we need …… to perform an activity. [ ]

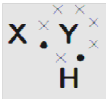
(A) Test tube, Rubber cap, Iron nail, Water
(B) Test tube, Rubber cap, Iron nail, Hot water, Oil
(C) Test tube, Rubber cap, Iron nail, Oil
(D) Test tube, Rubber cap, Iron nail, anhydrous Calcium chloride

30. Observe the given diagram. Identify the wrongly connected apparatus. [ ]



(A) Ammeter (B) Battery
(C) Light (D) Conductor

31. A chemical compound has the following Lewis notation:



How many valence electrons does element Y have? [ ]

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

32. A.C. Generator converts mechanical energy in to electricity.
The energy conversion in D.C. Generator is …….. [ ]

(A) electricity in to mechanical energy
(B) mechanical energy in to electricity
(C) mechanical energy in to chemical energy
(D) Sound energy in to electricity

33. Suresh is suffering from acidity. No tablets are available at his home.
You may suggest him to drink …….. [ ]

(A) Sodium chloride solution (B) Washing soda solution
(C) Baking soda solution (D) Lemon juice

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