

Dr.K.K.R GOWTHAM E.M HIGH SCHOOL :: GUDIVADA

Class : X
Sub : Physics

Time :
Marks :

Instructions:

1. There are four sections and 33 questions in the paper.
 2. Answers should be written in a given answer booklet.
 3. There is internal choice in Section-IV.
 4. Write all the questions visible & legibly.
 5. 15 minutes are given for reading the question paper and 2.30 hours given for answering questions.
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SECTION – I (12 × ½ = 6 M)

I. Answer the following :

1. Three bodies A, B and C are in thermal equilibrium. The temperature of B is 45°C. Then the temperature of 'C' is
2. If the object is placed at centre of curvature in front of convex lens, then where the image will be formed ?
3. Is the refractive index of given pair of media dependent on angle of incidence ?
4. Are the headlights of a car connected in series or parallel ?
5. Choose the correct statements related to magnetic lines of force.
 - Magnetic lines are closed lines
 - Magnetic lines are open lines
 - Magnetic lines are directed from N- pole to S- pole inside the magnet ?
6. What is the value of latent heat of fusion of ice ?
7. Among the following which is not an application of total internal reflection ?
 - i) Formation of mirages ii) Brilliance of diamonds iii) Twinkling of stars
8. When objects at different distances are seen by the eye which one is constant.
9. Define refractive index of the medium
10. Equal amount of water are kept in a cup and in a dish. Which will evaporate faster ? why?
11. Suggest the apparatus required to verify ohm's law ?
12. Write the lens maker's formula ?

SECTION – II(8 ×1 = 8 M)

II. Answer the following :

13. You are given kerosene, ice and water. In which of these does the light travel faster ?
14. What will be the colour of sky in the absence of atmosphere ?
15. Why do we consider tungsten as a suitable material for making the filament of a bulb ?
16. Define the term induced current ?
17. Define refractive index of the medium
18. Equal amount of water are kept in a cup and in a dish. Which will evaporate faster ? why ?
19. Suggest the apparatus required to verify ohm's law?
20. Write the lens maker's formula ?

SECTION – III (8 × 2 = 16 M)

III. Answer the following :

21. Give the applications of faraday's law of induction in daily life
22. Can a virtual image be photographed by a camera ?
23. What is the reason behind the shining of diamonds and how do you appreciate it ?
24. What would be the final temperature of a mixture of 50 g water at 20⁰C temperature and 50gm of water at 40⁰C temperature ?
25. Collect information about generation of current by using faraday's law ?
26. An old person is unable to see clearly nearby objects as well as distant objects.
 - 1) What defect of vision is he suffering from ?
 - 2) What kind of lens will be required to see clearly near by as well as distant objects ? Give reason ?
27. The focal length of a converging lens is 20cm. An object is placed at a distance of 60cm from the lens. Where will the image be formed and what kind of image it is ?
28. How much energy is transferred when 1gm of boiling water at 100⁰C cools to water at 0⁰C ?

SECTION – IV (5× 4 = 20M)

IV. Answer the following :

29. a) Explain the formation of rainbow.

Or

b) Write the difference between evaporation and Boiling
30. How do deduce the relation between refractive index and thickness of the glass slab, conduct an activity

Or

State Ohm's law. Suggest an experiment to verify it and explain the procedure.
31. Explain the formation of mirage.

Or

Deduce the expression for the equivalent of three resistors connected in series
32. How do you verify experimentally that the focal length of a convex lens is increased when it is kept in water ?

Or

How do you verify that a current carrying wire produces a magnetic field with the help of experiment
33. Draw the diagrams related to eye defect myopia and correction of myopia

Or

Draw the ray diagrams for the following positions and explain the nature and position of image.
 - i) object is placed at C₂
 - ii) object is placed between F₂ and optic centre p.