PHYSICS

BOOKS - SELINA PHYSICS (ENGLISH)

SELF ASSESSMENT PAPER -1

Section A

1. Name the factors affecting the turning effect of a body.

Watch Video Solution

2. Draw a graph between displacement from mean position and time for a body executing free vibration in a vacuum.

Watch Video Solution

3. Where can a body execute free vibrations?

Watch Video Solution

4. Name any two, electromagnetic waves, which have a frequency higher than that of violet light. State one use of each.

Watch Video Solution

5. State the energy changes in the following cases while in use:

(a) loudspeaker (b) a steam engine

(c) microphone (d) washing machine

(e) a glowing electric bulb (f) burning coal

(g) a solar cell (h) bio-gas burner

(i) an electric cell in a circuit (j) a petrol engine of a running car (k) an electric iron (l) a ceiling fan

(m) an electromagnet

Watch Video Solution

6. A jack screw is provided with a long arm. Explain why?

Watch Video Solution

7. Copy and complete the following table.

Type of lens	Position of object	Nature of the image	Size of the image
Convex	At F		
Concave	At infinity		

Watch Video Solution

8. The ratio of amplitude of two waves is 3:4.

What is the ratio of their

(i) Loudness?

(ii) Frequencies?

Watch Video Solution

9. State the Snell's laws of refraction of light.

Watch Video Solution

10. Two bulbs are marked 100 W, 220 V and 60 W, 110 V. Calculate the ratio of their resistances.

Watch Video Solution

11. State the position of the object in front of a converging lens if :

It produces a real and same size image of the object.

Watch Video Solution

12. State the position of the object in front of a converging lens if :

It is used as a magnifying lens.

Watch Video Solution

13. A ray of light passes from water to air, How does the speed of light change ?

Watch Video Solution

14. Which colour of light travels fastest in any medium except air ?

Watch Video Solution

15. How many protons will constitute a charge of 1 C?

Watch Video Solution

16. A wire of uniform thickness with a resistance of 27Ω is cut into three equal pieces and they are joined in parallel. Find the resistance of the paralel combination.

Watch Video Solution

17. Calculate the quantity of heat produced in a 20Ω resistor carrying 2.5 A current in 5 minutes.

Watch Video Solution

18. A solid of mass 50 g at 150° C is placed in 100 g of water at $11^{\circ}C$, when the final temperature recorded is 20° C. Find the specific heat capacity of the solid.

(Specific heat capacity of water=$4.2J/g^{\circ}$ C)

Watch Video Solution

19. You have three resistors of values $2\Omega, 3\Omega$ and 5Ω. How will you join them so that the total resistance is more than 7Ω? Draw a diagram for the arrangement.

Watch Video Solution

20. You have three resistors of values $2\Omega, 3\Omega$ and 5Ω. How will you join them so

that the total resistance is more than 7Ω?

Calculate the equivalent resistance.

Watch Video Solution

21. Explain, why-one feels ice cream at $0^{\circ}C$ colder than water at $0^{\circ}C$?

Watch Video Solution

22. How is the refractive index of a medium related to the real and apparent depths of an

object in that medium ?

Watch Video Solution

23. How is the refractive index of a material related to:

Velocity of light in vacuum or air and the velocity of light in a given medium?

Watch Video Solution

24. A boy weighing 40 kgf climbs up a stair of 30 steps each 20 cm high in 4 minutes and a girl weighing 30 kgf does the same in 3 minutes.Compare:

(i)the work done by them.and

(ii)the power developed by them .

Watch Video Solution

25. A Boy weighing 40 kg climbs up a stair of 30 steps each 20 cm high in 4 minutes and a

girl weighing 30 kg does the same in 3 minutes. Compare:

The power developed by them.

Watch Video Solution

26. (a) Name the high energetic invisible electro magnetic wave which helps in the study of the structure of crystals.

(b) State one more use of the wave named in part (a).

Watch Video Solution

Section B

1. (a) Name the high energetic invisible electro magnetic wave which helps in the study of the structure of crystals.

(b) State one more use of the wave named in part (a).

Watch Video Solution

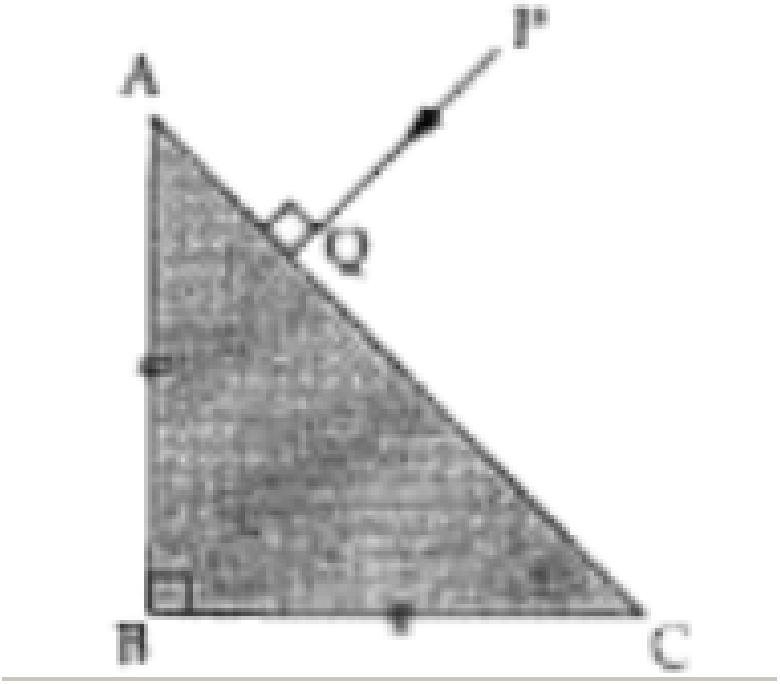
2. What is an echo?

Watch Video Solution

3. State two conditions for the formation of an echo.

Watch Video Solution

4. A ray of light PQ is incident normally on the hypotenuse of a right angled prism ABC as shown in the diagram.



Name an instrument where this action of the prism is used.

Watch Video Solution

5. Two resistors of 4Ω and 6Ω are connected in parallel to a cell to draw 0.5 A current from the cell.

Draw a labelled circuit diagram showing the above arrangement.

Watch Video Solution

6. Two resistors of 4Ω and 6Ω are connected in parallel to a cell to draw 0.5 A current from

the cell.

Calculate the current in each resistor.

Watch Video Solution

7. A lens produces a virtual image between the object and the lens.

Name the lens.

Watch Video Solution

8. A lens produces a virtual image between the object and the lens.

Draw a ray diagram to show the formation of this image.

Watch Video Solution

9. State Ohm's law.

Watch Video Solution

10. A metal wire of resistance 62 Ohms is stretched so that its length increased to twice of original length. Calculate its new resistance

Watch Video Solution

11. A person is tuning his radio set to a particular station. What is the person trying to do to tune it?

Watch Video Solution

12. Name the phenomenon involved, in tuning the radio set.

Watch Video Solution

13.

(i) A person is tuning his radio set to a particular station. What is the person trying to do to tune it? **[4]**

(ii) Name the phenomenon involved, in tuning the radio set.

(iii) Define the phenomenon named by you in part (ii).

Watch Video Solution

14. A half meter rod is pivoted at the centre with two weights of 20 gf and 12 gf suspended at a perpendicular distance of 6 cm and 10 cm from the pivot respectively as shown below.

Is the rod is in équilibrium?

View Text Solution

15. A half meter rod is pivoted at the centre with two weights of 20 gf and 12 gf suspended

at a perpendicular distance of 6 cm and 10 cm from the pivot respectively as shown below.

If the direction of 20 kgf force is reversed. What is the magnitude of the resultant moment of the forces on the rod?

View Text Solution

16. Give one use each of (a) microwaves, (b) ultraviolet radiations, (c) infrared radiations, and (d) gamma rays.

Watch Video Solution

17. Give one use each of (a) microwaves, (b) ultraviolet radiations, (c) infrared radiations, and (d) gamma rays.

Watch Video Solution

18. Give one use each of (a) microwaves, (b) ultraviolet radiations, (c) infrared radiations, and (d) gamma rays.

Watch Video Solution

19. The current rating of fuse is 10 A., Explain the statement.

Watch Video Solution

20. Answer the following:

(1) Name the three wires of the cable.

(2) To which wire should the metallic case of appliance is connected.

(3) Color code of neutral wire.

Watch Video Solution

21. Calculate the quantity of heat that will be produced in a coil of resistance 75 ohm, if a current of 2 A is passed through it for 2 min.

Watch Video Solution

22. A pulley system has a velocity ratio of 4 and an efficiency of 90%, calculate:

The mechanical advantage of the system.

Watch Video Solution

23. A pulley system has a velocity ratio of 4 and an efficiency of 90%, calculate:

The effort required to raise a load of 300 N by the system.

Watch Video Solution

24. Name the radiations which are absorbed by the green house gases in the earth's atmosphere.

Watch Video Solution

25. A radiation X is focused by a particular device on the bulb of a thermometer and mercury in .the thermometer shows a rapid increase. Name the radiation X.

Watch Video Solution

26. Name two factors on which the heat energy liberated by a body depends.

Watch Video Solution

27. What is the principle of method of mixture ? What other name is given to it? Name the law on which this principle is based.

Watch Video Solution

28. Name the law on which this principle is based.

Watch Video Solution

29. Draw a diagram to show the energy changes in an oscillating simple pendulum. Indicate in your diagram how the total mechanical energy in it remains constant during the oscillation.

Watch Video Solution

30. An object is placed at a distance of 12 cm from a convex lens of focal length 8 cm. Find :

the position of the image

Watch Video Solution

31. An object is placed at a distance of 12 cm from a convex lens of focal length 8 cm. Find : nature of the image

Watch Video Solution

32. State the factors affecting the resistance of a conductor.

Watch Video Solution

33. Mention two important precautions that should be taken while handling radioactive materials

Watch Video Solution

34. State one use of radio-isotopes.

Watch Video Solution

35. It is observed that:

alpha particles and beta particles are deflected by an electric or magnetic field.

Explain observations.

Watch Video Solution

36. It is observed that:

gamma rays are not deflected by either an electric or a magnetic field. Explain observations.

Watch Video Solution