

10th Class Physical Science

Bits & Diagrams Practice test in Physics

1. An unknown circuit draws a current of 2 A from 12 V battery. Its equivalent resistance is ---- Ohms.

- | | |
|-------|------|
| 1. 24 | 2. 6 |
| 3. 12 | 4. 2 |

2. The radius of curvature of a spherical mirror is 20 cm. what is the focal length?

- | | |
|----------|----------|
| 1. 10 cm | 2. 12 cm |
| 3. 20 cm | 4. 40 cm |

3. For which mirror (s) the magnification is always 1.

- i. convex mirrors
- ii. concave mirrors
- iii. plane mirrors

- | | |
|------------------|-------------|
| 1. i only | 2. ii only |
| 3. i and ii only | 4. iii only |

4. Identify the applications of total internal reflection among the following

- i. Brilliance of diamonds
- ii. working principle of optical fibers
- iii. twinkling of stars
- iv. colour of sky

- | | |
|--------------------|--------------------|
| 1. both i and ii | 2. both ii and iii |
| 3. both iii and iv | 4. both iv and i |

5. A current flows in a conductor from east to west the direction of the magnetic field a point above the conductor is

- | | |
|------------------|------------------|
| 1. towards north | 2. towards south |
| 3. towards east | 4. towards west |

6. A ray which seems to be travelling through the focus of a concave mirror passes – after reflection

- 1. Parallel to the axis
- 2. Along the same path in opposite direction
- 3. Through the Focal point
- 4. Through the Center of Curvature

7. The change in focal length of an eye lens is caused by the action of the _____

- | | |
|----------|--------------------|
| 1. Pupil | 2. Retina |
| 3. Iris | 4. Ciliary muscles |

8. If Same amount of heat is supplied to water and oil then

- i. The rate of raise in temperature of oil is higher than that of water
- ii. The rate of raise in temperature of oil is lower than that of water.
- iii. The specific heat of oil is less than water.
- iv. The specific heat of oil is greater than water.

Choose the correct answer

- | | |
|-----------------------|------------------------|
| 1. i, iii are correct | 2. ii, iv are correct |
| 3. i, iv are correct | 4. ii, iii are correct |

9. Identify the type(s) of mirror produces an image that is always the same height as the object, and always virtual?

- i. Convex mirror
- ii. Concave mirror
- iii. Plane mirror

- | | |
|-------------|-----------------------|
| 1. i only | 2. ii only |
| 3. iii only | 4. both i and ii only |

10. Raju wants to measure the specific heat of Lead ball. Which of the following instrument is needed to do this experiment?

- | | |
|----------------|---------------------|
| 1. Barometer | 2. Hydrometer |
| 3. Calorimeter | 4. Bomb Calorimeter |

11. The speed of a light in the medium is $\frac{2}{3}$ times of the velocity of light in vacuum. Then the refractive index of a medium is

- | | |
|---------|---------|
| 1. 1.5 | 2. 1.05 |
| 3. 1.55 | 4. 0.66 |

12. Electric current in a metallic conductor is thought to be due to movement of :

- | | |
|--------------|------------|
| 1. Ions | 2. Amperes |
| 3. Electrons | 4. Protons |

13. The basic cause of dispersion of white light on passing through a glass prism

- 1. Same wave length of different colours
- 2. Different wave lengths of different colours
- 3. Different Colours travel through glass prism with same speed

4. None of the above.

14. Which of the following is correct?

- 1. 1 Tesla = 1 N – m / Ampere
- 2. 1 Tesla = 1 N – m – Ampere
- 3. 1 Tesla = 1 N / Ampere – m
- 4. None of the above

15. If the angle of incidence is 30, then the angle between incident ray and reflected ray for a plane mirror is

- | | |
|-------|--------|
| 1. 30 | 2. 60 |
| 3. 90 | 4. 120 |

16. Units of magnetic flux density are

- | | |
|-----------------------------|-------------------------------|
| 1. weber | 2. weber/meter ² |
| 3. weber/meter ³ | 4. weber X meter ² |

17. Choose the correct answer by considering the specific heat values of Aluminium, copper, lead, iron

1. Lead < iron < copper < Aluminium
2. Aluminium < iron < copper < lead
3. Lead < copper < iron < aluminum
4. Copper < lead < iron < Aluminium

18. Refractive indexes of some media given below

Medium	Refractive Index
P	1.51
Q	1.72
R	1.83
S	2.42

Then in which media the speed of light will minimum and maximum.

1. P minimum, S maximum
 2. R minimum, S maximum
 3. S minimum, P maximum
 4. P minimum, R maximum
19. Two resistances are connected in parallel and a current is sent through the combination. The current divides itself:

1. in the inverse ratio of resistance
2. in the direct ratio of resistance
3. equally in both the resistance
4. in none of the above manner

20. In the right hand rule if the fore finger represents current, middle finger represents the direction of field then thumb gives

1. The current
2. The velocity
3. The charge
4. The direction of force

21. during refraction ----- will not change

- i. wave length
- ii. Frequency
- iii. speed of light

1. i only
2. ii only
3. iii only
4. All i, ii and iii

22. The light which bends most and least are

1. Red and Blue
2. Blue and Red
3. Violet and Red
4. Red and Violet

23. Which one of the following characteristics of light is not altered by refraction?

1. Speed
2. Wavelength
3. Frequency
4. Intensity

24. Which of the following materials cannot be used to make a lens?

- i. Clay
 - ii. Glass
 - iii. Metal
1. i only
 2. ii only
 3. i and iii
 4. I, ii and iii

25. Which mirror always forms an image which is equal to object in size

- i. Plane mirror
- ii. Concave mirror
- iii. Convex mirror

1. i only
2. ii only
3. iii only
4. Both ii and iii

26. A uniform wire of resistance 50 Ohms is cut into five equal parts. These parts are now connected in parallel. Then the equivalent resistance of the combination is

1. 2 Ohms
2. 12 Ohms
3. 250 Ohms
4. 6250 Ohms

27. Specific heat of a substance depends

- i. Nature of the substance
- ii. Mass of the substance
- iii. Heat given to the substance

1. Only i is correct
2. Both i and ii are correct
3. i, ii, iii are correct
4. i, ii, iii are wrong

28. Match the following . . .

1. Magnified letters	A. Convex lens
2. Diminished letters	B. Concave lens
3. Appear to be same	C. Plane Glass

1. 1 – A, 2 – B, 3 – C
2. 1 – C, 2 – B, 3 – A
3. 1 – A, 2 – C, 3 – B
4. 1 – C, 2 – A, 3 – B

29. Reciprocal of focal length in meters is known as the ----- of lens.

1. Focus
2. Power
3. Far point
4. Near point

30. Consider the following statements.

- i. In series connection the same current flows through each element
- ii. In parallel connection the same potential difference gets applied across each element.

Choose the correct option

1. both 1 and 2 are correct
2. 1 is correct but 2 is wrong
3. 1 is wrong but 2 is correct
4. both 1 and 2 are wrong

Diagram Based Questions . . .

31. Draw the basic view of the device which works to convert mechanical energy into electrical energy.

32. Rajeev suffering with Myopia. Which lens helps him to get good vision? Draw the diagram of showing the defect "Myopia".