

ROY'S INSTITUTE OF COMPETITIVE EXAMINATION

RRB NTPC GRADUATE & UNDER GRADUATE CBT-1

PHYSICS

HANDOUT - 2

10. A rainbow is produced due to which one of the following phenomena?
- a) Dispersion of light
 - b) Interference of light
 - c) Diffraction of light
 - d) Scattering of light by atmospheric dust
11. Which one of the following statements is not correct?
- a) Human eye is a refracting system containing a diverging lens.
 - b) The retina of the human eye contains millions of light sensitive cells, called rods and cones, which convert the light into electrical messages.
 - c) Every image that is focussed on the retina is upside down.
 - d) We need both eyes to judge the relative positions of objects accurately.
12. The focal length of the lens of a normal human eye is about –
- a) 25 cm
 - b) 1 m
 - c) 2.5 mm
 - d) 2.5 cm
13. In long-sightedness, images are formed –
- a) on retina
 - b) in front of retina.
 - c) behind the retina
 - d) on blind spot
14. The frequency of direct current is –
- a) zero
 - b) 50 Hz
 - c) 60 Hz
 - d) 100 Hz
15. A current of 1.0A is drawn by a filament of an electric bulb for 10 minutes. The amount of electric charge that flows through the circuit is –
- a) 0.1C
 - b) 10C
 - c) 600C
 - d) 800C
16. Which one of the following devices is non-ohmic?
- a) Conducting copper coil
 - b) Electric heating coil
 - c) Semiconductor diode
 - d) Fe wire
17. Which one of the following is an ohmic conductor?
- a) Germanium
 - b) Silicon
 - c) Carbon
 - d) Silver
18. The compression is made at the place where the air pressure is –
- a) Zero
 - b) Less
 - c) Endless
 - d) High
19. A compressed spring has _____ energy compared to a normal spring.
- a) Less
 - b) Equal
 - c) Zero
 - d) Greater
20. Fill in the blank with the correct option.
An object is thrown vertically upward, during the rise, potential energy _____ and kinetic energy _____ respectively.
- a) increases, decreases
 - b) decreases, increases
 - c) increases, increases
 - d) remains the same, remains the same
21. The upper and lower portions in common type of bi-focal lenses are respectively -
- a) concave and convex
 - b) b) convex and concave
 - c) both concave of different focal lengths
 - d) both convex of different focal lengths

22. Concave mirror is used in headlights of vehicles, because it -
 a) focuses light from the bulb onto nearby vehicles b) sends parallel rays
 c) fits well into the shape of the headlight d) is cheaper than other mirrors
23. A rainbow is produced due to which one of the following phenomena?
 a) Dispersion of light b) Interference of light
 c) Diffraction of light d) Scattering of light by atmospheric dust
24. Wavelength of visible light lies in between –
 a) 400 to 800 nm b) 500 to 1000 nm c) 300 to 600 nm d) 200 to 400 nm
25. A device for measuring temperatures at a distance is –
 a) Gas thermometer b) Mercury thermometer
 c) Radiation pyrometer d) Maximum-minimum thermometer
26. A piece of ice is floating in kerosene in a pot. When ice melts completely, the level of liquid will –
 a) Go up b) Remain the same
 c) Go down d) First go up then go down
27. Which of the following statements are true /false about the speed of sound in a different medium at 25° C?
 A. The speed of sound in oxygen gas is 316 m/s. B. Speed of sound in distilled water is 1498 m/s.
 a) Both A and B are correct b) Neither A nor B is correct
 c) Only A is correct d) Only B is correct
28. Why does sky appear blue?
 a) All colors of white light, except blue, are most strongly engraved by air molecules.
 b) The light of all colors is in the correct proportion.
 c) Blue wavelength is relatively low as white light and it is most scattered by air molecules.
 d) White light is reflected by all the air molecules.
29. Which type of mirror is used by dentists to see large image of patients' teeth?
 a) Spherical and convex mirror b) Spherical mirror
 c) Concave mirror d) Convex mirror
30. The radius of curvature of a concave mirror is 30 cm. Following cartesian sign convention, its focal length is expressed as –
 a) -15 centimeters b) -30 centimeters c) +15 cm d) +30 cm
31. The characteristic of sound which distinguishes a female voice from a male voice is called –
 a) pitch b) phase c) quality d) loudness
32. A body is charged negatively. It implies that –
 a) it has lost some of its protons
 b) it has acquired some electrons from outside
 c) it has lost some of its electrons
 d) none of these

33. Which one of the following pairs of rays is electromagnetic in nature?
- a) Beta rays and gamma rays b) Cathode rays and X-rays
c) Alpha rays and beta rays d) X-rays and gamma rays
34. If 4 resistances of $\frac{1}{4}\Omega$ are connected in series order then how much the maximum resistance may be obtained?
- a) 4Ω b) $\frac{1}{8}\Omega$ c) 1Ω d) $\frac{1}{4}\Omega$
35. Factors affecting resistance of matter are –
- I. Temperature II. Nature of substance
III. Conductor length IV. Area of cross section
a) All I, II, III and IV b) Only I, III and IV c) Only I, II and III d) Only I and III
36. In the visible spectrum the colour having the shortest wavelength is –
- a) Green b) Red c) Violet d) Blue
37. What causes the phenomenon of diffraction?
- a) Reflection of light b) Bending of light around obstacles
c) Scattering of light d) Absorption of light
38. Battery capacity is expressed in –
- a) Ampere-hour b) Voltage c) Battery load d) Volume of electrolyte
39. CV Raman was awarded the Nobel prize for his work associated with which of the following phenomenon of radiations?
- a) scattering b) diffraction c) interference d) polarization
40. What is the absolute refractive index of air?
- a) 1.03 b) 1.00003 c) 1.003 d) 1.0003