

Q1. On a rainy day, small oily films on water show brilliant colours. This is due to

- (a) Scattering
- (b) Interference
- (c) Refraction
- (d) Polarization

Q2. Rainbow formation is due to

- (a) Absorption of sunlight by water droplets
- (b) Diffusion of sunlight through water droplets
- (c) Ionization of water droplets
- (d) Reflection, refraction and dispersion of light

Q3. Stars appears to move from east to west because

- (a) all stars move from east to west
- (b) the earth rotates from west to east
- (c) the earth rotates from east to west
- (d) the background of the stars moves from west to east

Q4. Which of the following is not caused by atmosphere refraction of light?

- (a) Twinkling of stars at night
- (b) Sun appearing higher in the sky than it is actually
- (c) Sun becoming visible two or three minutes before actual sunrise
- (d) Sun appearing red at sunset

Q5. One can distinguish a telescope from a microscope by observing

- (a) length
- (b) colour
- (c) size of the lens
- (d) None of these

Q6. The principle due to which circular patches of light is seen under a tree during day time, is similar to that of image formation by a

- (a) concave lens
- (b) pinhole
- (c) photographic camera
- (d) convex lens

Q7. When a strong beam of light is passed through a colloidal solution, the light will

- (a) Be scattered
- (b) Pass unchanged
- (c) Be absorbed
- (d) Be reflected

Q8. Mirage is an example of

- (a) refraction of light only
- (b) total internal, reflection of light only
- (c) refraction and total internal reflection of light
- (d) dispersion of light only



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Q9. The phenomenon of light associated with the appearance of blue colour of the sky is

- (a) interference
- (b) reflection
- (c) refraction
- (d) scattering

Q10. Lens is made up of

- (a) pyrex glass
- (b) flint glass
- (c) ordinary glass
- (d) cobalt glass

Q11. Which of the following is not a Vector quantity?

- (a) Speed
- (b) Velocity
- (c) Torque
- (d) Displacement

Q12. The dimensional formula for universal gravitational constant is

- (a) $[M^{-2}]$
- (b) $[M^{-1}L^3T^{-2}]$
- (c) $[M^{-1}L^3T^2]$
- (d) $[ML^2T^{-2}]$

Q13. Decibel is used to measure the intensity of

- (a) Magnetic field
- (b) Sound
- (c) Light
- (d) Heat

Q14. A micron is equal to

- (a) 0.1 mm
- (b) 0.01 mm
- (c) 0.001 mm
- (d) 0.0001 mm

Q15. Dimensional formula of latent heat

- (a) $M^0L^2T^{-2}$
- (b) MLT^{-2}
- (c) ML^2T^{-2}
- (d) ML^2T^{-2}

Q16. Therm is the unit of

- (a) Power
- (b) Heat
- (c) Light
- (d) Distance

Q17. Knot is measure of

- (a) The speed of ship
- (b) The curvature of spherical objects
- (c) Solar radiation
- (d) Intensity of earthquake shock

Q18. The dimension of which of the following is the same as that of impulse?

- (a) Volume
- (b) Momentum
- (c) Torque
- (d) Change in the rate of momentum

Q19. Which among the following is the fundamental quantity?

- (a) volume
- (b) Time
- (c) Velocity
- (d) Force

Q20. The dimensional formula of coefficient of viscosity is

- (a) $[MLT^{-1}]$
- (b) $[M^{-1}L^2T^{-2}]$
- (c) $[ML^{-1}T^{-1}]$
- (d) None of these



Q21. A current carrying conductor is associated with

- (a) A magnetic field
- (b) An electric field
- (c) An electro-magnetic field
- (d) An electrostatic field

Q22. Farad is the unit of

- (a) Resistance
- (b) Conductance
- (c) Capacitance
- (d) Inductance

Q23. A good conductor while carrying current is

- (a) Negatively charged
- (b) Positively charged
- (c) Electrically neutral
- (d) Alternately charged positive and negative

Q24. Electrostatic precipitator is used to control

- (a) Air pollution
- (b) Water pollution
- (c) Solid waste
- (d) Noise pollution

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Q25. The angle between the magnetic meridian and the geographical meridian at a place is

- (a) Dip
- (b) Declination
- (c) Latitude
- (d) Azimuth

Q26. A compass needle cannot be used to detect

- (a) Magnetic North-South direction
- (b) Polarity of a magnet
- (c) Strength of a magnet
- (d) Direction of magnetic field

Q27. Indicate the false statement about the resistance of a wire

- (a) It depend on material of wire
- (b) It is unrectly proportional to the length of wire
- (c) It is directly proportional to the area of cross-section of wire
- (d) Resistance of metallic wire increases with increase in temperature

Q28. For which of the following substances, the resistance decreases with increase in temperature?

- (a) Pure silicon
- (b) Copper
- (c) Nichrome
- (d) Platinum

Q29. The ratio of intensity of magnetisation to the magnetisation force is known as

- (a) flux density
- (b) susceptibility
- (c) relative permeability
- (d) none of the above

Q30. When a bar magnet is cut into two equal halves, the pole strength of each piece

- (a) Becomes double
- (b) Becomes half
- (c) Becomes zero
- (d) Remains the same

Q31. Two stones of unequal masses are thrown vertically up with the same velocity. Which of the following will happen?

- (a) The heavier mass will reach greater height
- (b) The lighter mass will reach greater height
- (c) Both will reach the same height
- (d) Any of them may reach greater height

Q32. The centre of gravity of a sprinter during the race lies

- (a) ahead of his feet
- (b) behind his feet
- (c) at the centre of the body
- (d) to the left side of the body

Q33. A person is hurt on kicking a stone due to

- (a) inertia
- (b) velocity
- (c) reaction
- (d) momentum

Q34. Two stones of different masses are dropped simultaneously from the top of a building

- (a) smaller stone reaches the ground earlier
- (b) larger stone reaches the ground earlier
- (c) both the stones reach the ground at the same time
- (d) depends on the composition of the stone

Q35. What should a person on a freely rotating turn table do to decrease his (angular) speed?

- (a) Bring his hands together
- (b) Raise his hands up
- (c) Spread his hands outwards
- (d) Sit down with raised hands

Q36. A boy sitting in an open car moving with the constant speed throws a ball straight up into the air. The ball falls

- (a) behind him
- (b) in front of him
- (c) into his hand
- (d) None of these

Q37. If the velocity-time graph of a particle is represented by $y = mt + c$, then the particle is moving with

- (a) constant speed
- (b) constant velocity
- (c) constant acceleration
- (d) varying acceleration

Q38. A particle dropped from the top of a tower uniformly falls on ground at a distance a which is equal to the height of tower. Which of the following paths will be traversed by the particle?

- (a) circle
- (b) Parabolic
- (c) Great circle
- (d) Hyper-parabolic

Q39. A sphere rolls down on two inclined planes of different angles but same height, it does so

- (a) in the same time
- (b) with the same speed
- (c) in the same time with the same speed
- (d) in the same time with the same kinetic energy

Q40. Should cars have bumpers that collapse under impact?

- (a) Yes, since the offending car should get damaged and pay for the mistake
- (b) No, since it would be very expensive to get the car repaired
- (c) No, since the colliding car would then ram into the occupants and kill them
- (d) Yes, since they help to absorb the impact of a collision and keep the occupants safe

Q41. Safety fuse wire used in domestic electrical appliances is made of metal of low

- (a) resistance
- (b) melting point
- (c) specific gravity
- (d) conductance

Q42. If input frequency of a full wave rectifier be n , then output frequency would be

- (a) $\frac{n}{2}$
- (b) n
- (c) $\frac{3n}{2}$
- (d) $2n$

Q43. A transformer works on the principle of

- (a) self induction
- (b) mutual induction
- (c) generator
- (d) inverter

Q44. In AC circuits, AC meters measure

- (a) mean values
- (b) rms values
- (c) peak values
- (d) mean square values

Q45. The best material for the core of a transformer is

- (a) stainless steel
- (b) mild steel
- (c) hard steel
- (d) soft iron

Q46. Which of the following circuit elements is used to 'block' DC in an electronic circuit?

- (a) Resistance
- (b) Capacitance
- (c) Inductance
- (d) None of these

Q47. In the process of magnetization of a bar

- (a) the entire bulk of the bar gets magnetised
- (b) only the surface of the bar gets magnetised
- (c) only the ends of the bar get magnetised
- (d) only some parts of the other layers of the bar get magnetised

Q48. The metal whose electrical conductivity is more, is

- (a) copper
- (b) aluminium
- (c) silver
- (d) lead

Q49. Water cannot be used to extinguish fire caused by electric current, because

- (a) it may cause electrocution
- (b) it may cause hydrolysis
- (c) it may cause electrolysis
- (d) it may spoil the wiring

Q50. Superconductors are those elements

- (a) whose conductivity is intermediate between metals and insulators
- (b) whose resistance falls almost to zero at very low temperature
- (c) which turn into insulators at very low temperatures
- (d) which conduct electricity only at super-high temperature



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