LUCKNOW PUBLIC SCHOOLS & COLLEGES

CLASS - IX (ICSE)

MCQ EXAMINATION : 2025-26

Candidate's Name in CAPITAL letters | Sec.

Branch

Roll No. : | Candidate's Signature | Invigilator's Signature

Date :

INSTRUCTIONS FOR OMR SHEET:-

1. **Attempt ALL the questions.**
2. **Use only black or blue (ball pen) for darkening/writing in appropriate oval/box.**
3. **While darkening the oval/box it is to be ensured that these are darkened completely.**
4. **OMR sheet shall not be folded or tampered in any way.**
5. **Over writing/erasing/dual data & use of correction fluid will render OMR sheet invalid.**

TIME : 2 Hrs. **M.M. : 80**

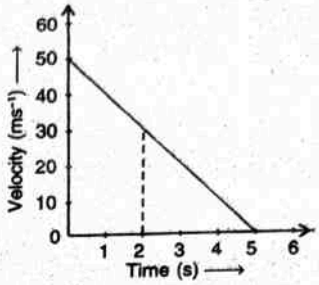
SCIENCE PAPER - 1 [PHYSICS]

1. The distance of planet from the earth is 11 light minutes. What is the distance in Km?
   (a) 1.67×10^{9} km
   (b) 1.98×10^{8} km
   (c) 1.36×10^{8} km
   (d) 2.16×10^{9} km
2. A vernier callipers has 1 mm marks on the main scale. It has 20 equal divisions on vernier scale which match with 16 main scale divisions. For the vernier callipers, the least count is:
   (a) 0.02 mm (b) 0.05 mm
   (b) 0.1 mm (d) 0.2 mm
3. A screw gauge has least count of 0.01 mm and there are 50 divisions in its circular scale. The pitch of the screw gauge is:
   (a) 0.25 mm (b) 0.5 mm
   (c) 1.0 mm (d) 0.01 mm
4. Parallactic second is the unit of:
   (a) Distance (b) Velocity
   (c) Time (d) Angle
5. A instrument has the least count 1 mm. The instrument will be:
   (a) Vernier callipers
   (b) Screw gauge
   (c) Metre rule
   (d) None of these
6. One lunar cycle is nearly equal to:
   (a) 28.5 days
   (b) 29.5 days
   (c) 30 days
   (d) 30.5 days
7. Identify the correct use of the thimble of a screw gauge:
   (a) To read length correct up to 0.01 mm
   (b) To read length correct up to 1 mm
   (c) To mark main scale and base line
   (d) To mark circular scale.

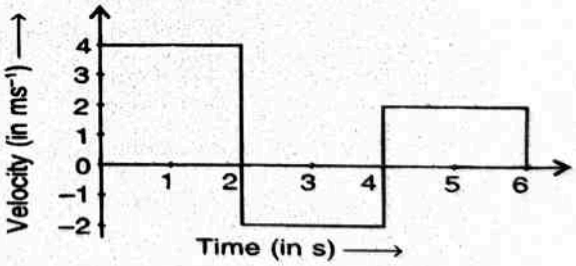
Space for rough work

8. Which of the following is the correct ascending order of accuracy?
   (a) Metre rule, vernier callipers, screw gauge
   (b) Vernier callipers, metre rule, screw gauge
   (c) Screw gauge, vernier callipers, metre rule
   (d) None of the above.
9. The time period of two pendulums of length 1 m and 16 m are in ratio:
   (a) 1 : 16
   (b) 1 : 4
   (c) 16 : 1
   (d) 4 : 1
10. The length of a seconds' pendulum is nearly –
   (a) 0.5 m (b) 9.8 m
   (c) 1.0 m (d) 2.0 m
11. A particle is moving in a circular path of radius 7cm, the displacement after half revolution would be :
   (a) 0 cm (b) 22 cm
   (c) 14 cm (d) 44 cm
12. Find the odd one out
   (a) weight
   (b) acceleration
   (c) velocity
   (d) distance
13. A body starts from rest with a uniform acceleration of 2 ms^{-2}. The distance covered by the body in 2 seconds :
   (a) 2 m (b) 4 m
   (c) 6 m (d) 8 m
14. A motor boat travel from A to B at a speed of 20 kmh^{-1} and returns from B to A at a speed of 30 kmh^{-1}, The average speed of motor boat is:
   (a) 25 kmh^{-1}
   (b) 24 kmh^{-1}
   (c) 0 kmh^{-1}
   (d) 28 kmh^{-1}
15. A train 400 m long is moving with a speed of 25 ms^{-1}. In how much time will it cross a bridge of length 2 km?
   (a) 88 s (b) 80 s
   (c) 112 s (d) 96 s
16. From the velocity-time graph, we can determine:
   (a) The displacement of the body in a certain time interval.
   (b) The acceleration of the body at any instance.
   (c) Both (a) and (b)
   (d) None of these

Study the velocity-time graph shown below and answer the questions 17 & 18.

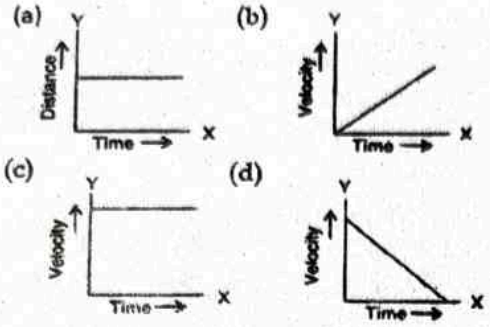


17. The distance travelled in 5 s :
   (a) 10 m (b) 50 m
   (c) 125 m (d) 250 m
18. The retardation of the body as calculated from the graph is :
   (a) 12 ms^{-2} (b) 15 ms^{-2}
   (c) 10 ms^{-2} (d) 20 ms^{-2}
19. A car starting from rest accelerates uniformly to acquire a speed 20 km h^{-1} in 30 min. The distance travelled by car in this time interval will be :
   (a) 60 km (b) 5 km
   (c) 6 km (d) 10 km
20. The velocity-time graph given below shows an object moving in a straight line. The displacement and the distance travelled by the object in 6 s will respectively be:



   (a) 8 m, 16 m (b) 16 m, 8 m
   (c) 16 m, 16 m (d) 8 m, 8 m

21. Which of the following graphs shown below represents the uniformly accelerated motion of an object?



22. A car of mass m runs at constant speed on a road. If the engine suddenly fails, which force is responsible for bringing it to rest?
(a) Engine force
(b) Friction and air resistance
(c) Weight of the car
(d) Normal reaction

23. Two objects A and B have equal momenta. If A has twice the mass of B, then which statement is true?
(a) Velocity of A is half that of B
(b) Velocity of A is double that of B
(c) Both have equal velocity
(d) Their kinetic energies are equal

24. A sprinter applies a constant force F and reaches speed v in time t. Another athlete applies the same F and reaches the same speed in 2t. What can you conclude about their masses?
(a) Second athlete has twice the mass of first
(b) Second athlete has half the mass of first
(c) Both have equal masses
(d) Data insufficient

25. A ball is thrown vertically upwards. At its highest point:
(a) Net force = 0, velocity = 0, acceleration = 0
(b) Net force = 0, velocity = 0, acceleration $\neq$ 0
(c) Net force $\neq$ 0, velocity = 0, acceleration $\neq$ 0
(d) Net force $\neq$ 0, velocity $\neq$ 0, acceleration = 0

26. A stone tied to a string is whirled in a horizontal circle. When the string breaks, it moves:
(a) Tangentially in a straight line
(b) Radially outward
(c) Continues in a circle for a while
(d) Vertically upward

27. A constant force F acts on a body for time Δt, producing change in momentum Δp. If the same force acts for $2\Delta t$, the change in momentum is:
(a) Δp
(b) $2\Delta p$
(c) $4\Delta p$
(d) Cannot say

28. A rocket ejects gases backward in space. According to Newton's Third Law:
(a) Gas pushes rocket, rocket pushes gas equally
(b) Gas pushes rocket only
(c) Rocket pushes gas only
(d) No action-reaction involved

29. Two blocks, masses M and 2M, are pulled with the same force on smooth surfaces. If the lighter one attains velocity u in time t, the heavier one's velocity at same time is:
(a) u/2
(b) u
(c) 2u
(d) Cannot say

30. A box is pushed on a rough floor. Before motion begins, frictional force is:
(a) Equal to applied force (up to a limit)
(b) Always greater than applied force
(c) Always less than applied force
(d) Independent of applied force

31. On planet X acceleration due to gravity is g, on planet Y it is 2g. If an object is dropped from the same height h, ratio of times of fall (Y : X) is :
(a) 1 : 2
(b) $1:\sqrt{2}$
(c) 1 : 1
(d) 2 : 1

32. Choose the incorrect statement for the gravitational force between two masses
(a) it is always attractive
(b) it is directly proportional to the bigger mass
(c) it is significant for heavenly bodies
(d) It is inversely proportional to the smaller mass.

33. The value of 'g'
(a) remains constant on the surface of earth
(b) it increases from equator to poles
(c) it reduces from equator to poles
(d) it increases on moving away from the Earth surface

34. The amount of heat energy contained by a body depends on:
(a) the mass of the body
(b) the temperature of the body
(c) the nature of the material of the body
(d) all of the above

35. The temperature at which pressure and volume of a gas become zero is:
(a) 0° C
(b) 0 K
(c) 0° F
(d) 273 K

36. The increase in the length of a solid on heating is called:
(a) contraction
(b) linear expansion
(c) cubical expansion
(d) superficial expansion

37. Celsius and Fahrenheit scales are related as :
(a) $\frac{C}{5}=\frac{F-32}{9}$
(b) $\frac{C}{5}=\frac{F+32}{9}$
(c) $\frac{C}{9}=\frac{F+32}{5}$
(d) $\frac{C}{9}=\frac{F-32}{5}$

38. Renewable source of energy is –
(a) coal
(b) fossil fuels
(c) natural gas
(d) sun

39. A glass tumbler cracks when very hot water is suddenly poured into it. Which property of glass is mainly responsible?
(a) High thermal conductivity
(b) Low specific heat capacity
(c) Unequal expansion of inner and outer surfaces
(d) High emissivity

40. Ice at 0°C is added to water at 30°C. The final temperature remains at 0°C until all ice melts. Which concept explains this?
(a) Latent heat of fusion
(b) Specific heat capacity
(c) Thermal conduction
(d) Radiation

41. When steam at 100°C is passed into water at 30°C, the rise in water temperature is much faster than when same mass of water at 100°C is mixed. Why?
(a) Steam condenses and releases latent heat
(b) Steam has higher density than water
(c) Steam rises faster and transfers more convection currents
(d) Steam conducts heat better than water

42. Which of the following energy sources is non-renewable but causes least pollution when burnt?
(a) Coal
(b) Petroleum
(c) Natural gas
(d) Wood

43. A thermal power station uses coal as fuel. In which form is the primary energy of coal released and converted first?
(a) Chemical → Heat → Mechanical → Electrical
(b) Mechanical → Chemical → Heat → Electrical
(c) Chemical → Electrical → Mechanical → Heat
(d) Nuclear → Heat → Mechanical → Electrical

44. A student mistakenly thinks "temperature is the measure of total heat in a body." What is the correct explanation?
(a) Temperature measures average kinetic energy, not total heat content
(b) Temperature equals potential energy of molecules
(c) Temperature is proportional to density of substance
(d) Temperature depends only on specific heat capacity

45. Select the Mirror Equation.
(a) $f = \frac{u - v}{u.v}$
(b) $f = \frac{u + v}{u.v}$
(c) $f = u + v$
(d) $f = u - v$

46. Name the type of mirror used in the headlights of a car?
(a) Concave Mirror
(b) Convex Mirror
(c) Plane Mirror
(d) None of these

47. A parallel beam of light falls on a concave mirror. After reflection, the rays converge at a point 25 cm from the mirror. If the mirror is rotated by 5°, what happens to the focal point?
(a) It shifts sideways but remains 25 cm away
(b) It moves closer to mirror
(c) It moves farther away
(d) It disappears

48. A candle is placed 20 cm in front of a concave mirror of focal length 15 cm. The image formed will be:
(a) Virtual and magnified
(b) Real, inverted and magnified
(c) Real, inverted and diminished
(d) At infinity

49. A man uses a concave mirror to shave, holding his face 10 cm from it. If the mirror has focal length 15 cm, the image will be :
(a) Virtual, erect, magnified
(b) Real, inverted, magnified
(c) Real, diminished
(d) Virtual, diminished

50. A convex mirror forms an image half the size of the object. If focal length is 20 cm, the object distance is approximately:
(a) 30 cm
(b) 40 cm
(c) 50 cm
(d) 60 cm

51. A concave mirror of focal length 20 cm produces a sharp image of an object placed at 30 cm on a screen. If the screen is then moved 5 cm closer to the mirror, in which direction must the object be moved so the image is sharp again?
(a) Move the object farther from the mirror
(b) Move the object closer to the mirror
(c) Move the object farther from the mirror
(d) No movement will restore sharpness.

52. A ray passes through the focus of a concave mirror before striking it. After reflection, the ray will:
(a) Retrace path
(b) Pass through centre of curvature
(c) Emerge parallel to principal axis
(d) Diverge from pole

53. If the focal length of a concave mirror is 40 cm. What will be its focal length if the mirror is immersed in water?
(a) 10 cm
(b) 20 cm
(c) 30 cm
(d) 40 cm

54. Two plane mirrors are inclined at 120°. How many images of an object placed between them will be formed?
(a) 2 (b) 3
(c) 5 (d) Infinite

55. When a sound wave travels from air to water:
(a) Its speed and wavelength change, but frequency remains same
(b) Its speed, wavelength, and frequency all change frequency remain same
(c) Only its speed changes, wavelength and frequency remain same
(d) Only frequency changes

56. If the temperature of air rises, the speed of sound in air:
(a) Increases
(b) Decreases
(c) Remains constant
(d) Becomes zero

57. Which factor does not affect the loudness of a sound heard?
(a) Amplitude of vibration
(b) Distance from source
(c) Frequency of vibration
(d) Presence of reflecting surfaces

58. A boy hears an echo 0.2 s after shouting. Minimum distance of the reflecting wall must be:
(a) 8.5 m
(b) 17 m
(c) 34 m
(d) 68 m

59. Two sounds of same loudness and pitch but produced by a flute and a violin can be distinguished due to difference in:
(a) Frequency
(b) Amplitude
(c) Quality (timbre)
(d) Wavelength

60. Which statement about echo is incorrect?
(a) It is a reflected sound
(b) It can be heard only if time gap is ≥ 0.1 s
(c) It is louder than the original sound
(d) It travels at the same speed as original sound

61. In SONAR, the depth of sea is measured using:
(a) Refraction of sound
(b) Echo of ultrasonic waves
(c) Interference of sound
(d) Beats of sound

62. A boy plucks two guitar strings of same thickness and tension, but of different lengths. The string with shorter length produces:
(a) Lower pitch
(b) Higher pitch
(c) Same pitch
(d) No sound

63. A tuning fork produces a sound wave in air with wavelength 0.68 m and speed 340 m/s. Its frequency is:
(a) 50 Hz
(b) 200 Hz
(c) 340 Hz
(d) 500 Hz

64. Which of the following conditions must be satisfied for a bulb to glow in a simple circuit?
(a) Cell connected only
(b) Closed path for current
(c) Open switch
(d) Bulb connected without cell

65. The flow of electrons in a conductor takes place from:
(a) High potential to low potential
(b) Negative terminal to positive terminal
(c) Positive terminal to negative terminal
(d) Zero potential to infinite potential

66. A charge of 30 C passes through a wire in 2 minutes. The current is:
(a) 0.25 A
(b) 0.5 A
(c) 1 A
(d) 15 A

67. If 60 J of work is required to move 20 C of charge between two points, the potential difference is:
(a) 2 V
(b) 3 V
(c) 20 V
(d) 40 V

68. An ammeter is always connected in _____ in a circuit.
(a) Parallel
(b) Series
(c) Cross connection
(d) With a voltmeter

69. Which of the following is a correct social initiative for electricity conservation?
(a) Using filament bulbs
(b) Running appliances unnecessarily
(c) Using LED lamps
(d) Leaving devices on standby

70. Which one is not a direct current source?
(a) Cell
(b) Accumulator
(c) AC mains
(d) Battery

71. A rheostat in a simple circuit is used to:
(a) Open the circuit
(b) Vary the current
(c) Measure the resistance
(d) Store charge

72. A galvanometer connected in a circuit shows a deflection. This indicates:
(a) Resistance of wire
(b) Flow of current
(c) Voltage drop across battery
(d) Heat produced

73. If we increase the temperature of a wire, then
(a) resistance will decrease
(b) resistance will increase
(c) no effect
(d) none of the above

74. **Assertion (A) :** Two bar magnets attract when they are brought near to each other with the same pole.
Reason (R) : Unlike poles attract each other.
(a) both A and R are true and R is the correct explanation of A
(b) both A and R are true and R is not the correct explanation of A
(c) assertion is false but reason is true
(d) assertion is true but reason is false.

75. **Assertion (A) :** Magnetic field lines never intersect each other.
Reason (R) : At a particular point, magnetic field has only one direction.
(a) both A and R are true and R is the correct explanation of A
(b) both A and R are true and R is not the correct explanation of A
(c) assertion is false but reason is true
(d) assertion is true but reason is false

76. **Assertion (A) :** Neutral points are the points at which two magnetic fields are equal in magnitude and in the same direction.

Reason (R) : The net magnetic field at a neutral point is zero.

(a) both A and R are true and R is the correct explanation of A
(b) both A and R are true and R is not the correct explanation of A
(c) assertion is false but reason is true
(d) assertion is true but reason is false

77. A freely suspended bar magnet is taken to the north pole of the earth. It comes to rest:
(a) in any direction
(b) parallel to the earth's surface
(c) nearly vertical with the south pole in a downward direction
(d) nearly vertical with the north pole in a downward direction.

78. Which of the following is not a correct statement for a magnet placed in the earth's magnetic field?
(a) Neutral points are always at an equal distance from the magnet.
(b) The position of neutral points depends on the direction of the magnet in the earth's magnetic field.
(c) The position of neutral points does not depend on the direction of the magnet.
(d) The magnetic field strength is zero at the neutral points.

79. A soft iron bar is tied by a thread in the middle and is suspended from a rigid support such that it is free to rotate in a horizontal plane. It shall come to rest:
(a) along north-south direction
(b) along east-west direction
(c) equally inclined to N-S and E-W direction
(d) in any direction

80. The magnetic field lines in a non uniform magnetic field are:
(a) either converging or diverging
(b) parallel and equispaced
(c) only converging
(d) only diverging

#####