MPSC Meghalaya LDA: General Physics High-Yield Guide

(50 Solved High-Probability MCQs)

Meghalaya Exam Science Series

Part I: High-Yield Physics Notes & Tables

1. SI Fundamental Units

Physical Quantity	SI Unit	Symbol
Length	Metre	m
Mass	Kilogram	kg
Time	Second	s
Electric Current	Ampere	A
Temperature	Kelvin	K
Luminous Intensity	Candela	cd
Amount of Substance	Mole	mol

2. Important Conversion Factors

- **Force:** 1 Newton = 10^5 dyne.
- **Work/Energy:** 1 Joule = 10^7 erg.
- **Power:** 1 Horse Power (HP) = 746 Watts (Note: Some texts use 747W).
- **Distance:** 1 Light Year = 9.46×10^{15} metres.
- **Angstrom:** 1 Å= 10^{-10} metre (used for wavelength).
- **Nautical Mile:** 1.85 Kilometre.

Part II: Practice MCQs

1. The chosen standard used for measuring a physical quantity is called: **[Ans: (b) Unit]**

   (a) Scalar
   (b) Unit
   (c) Vector
   (d) Magnitude

2. How many fundamental units are defined in the SI system? **[Ans: (c) 7]**

   (a) 5
   (b) 6
   (c) 7
   (d) 9

3. Which of the following is a supplementary unit? **[Ans: (b) Radian]**

(a) Ampere
(b) Radian
(c) Candela
(d) Mole

4. Light year is a unit of: **[Ans: (a) Distance]**

(a) Distance
(b) Time
(c) Intensity of light
(d) Velocity

5. One Newton is equal to how many dynes? **[Ans: (c) 10^5]**

(a) 10^3
(b) 10^7
(c) 10^5
(d) 10^6

6. The SI unit of Luminous Intensity is: **[Ans: (b) Candela]**

(a) Lumen
(b) Candela
(c) Lux
(d) Watt

7. 1 Joule is equal to how many ergs? **[Ans: (b) 10^7]**

(a) 10^5
(b) 10^7
(c) 10^{-7}
(d) 10^{10}

8. 1 Horse Power (HP) is equal to: **[Ans: (c) 746 Watts]**

(a) 700 Watts
(b) 500 Watts
(c) 746 Watts
(d) 1000 Watts

9. 'Angstrom' is the unit used to measure: **[Ans: (b) Wavelength]**

(a) Liquid volume
(b) Wavelength
(c) Sound intensity
(d) Speed of ships

10. The unit of Electric Resistance is: **[Ans: (b) Ohm]**

(a) Farad
(b) Ohm
(c) Henry

(d) Weber

11. Which of the following is a vector quantity? **[Ans: (c) Displacement]**

(a) Distance
(b) Speed
(c) Displacement
(d) Mass

12. The rate of change of displacement is known as: **[Ans: (b) Velocity]**

(a) Speed
(b) Velocity
(c) Acceleration
(d) Retardation

13. The tendency of a body to resist any change in its state of rest or motion is: **[Ans: (a) Inertia]**

(a) Inertia
(b) Force
(c) Momentum
(d) Acceleration

14. Newton's First Law of Motion is also known as: **[Ans: (b) Law of Inertia]**

(a) Law of Momentum
(b) Law of Inertia
(c) Law of Action-Reaction
(d) Law of Gravity

15. A passenger in a moving bus is thrown forward when the bus suddenly stops. This is due to: **[Ans: (b) Inertia of Motion]**

(a) Inertia of Rest
(b) Inertia of Motion
(c) Gravitational pull
(d) Centrifugal force

16. The product of mass and velocity is called: **[Ans: (c) Momentum]**

(a) Force
(b) Impulse
(c) Momentum
(d) Work

17. 'To every action, there is an equal and opposite reaction' is: **[Ans: (c) Newton's 3rd Law]**

(a) Newton's 1st Law
(b) Newton's 2nd Law
(c) Newton's 3rd Law
(d) Law of Conservation of Mass

18. Rocket propulsion works on the principle of: **[Ans: (d) Conservation of Linear Momentum]**

(a) Newton’s 1st Law
(b) Newton’s 2nd Law
(c) Archimedes Principle
(d) Conservation of Linear Momentum

19. The energy possessed by a body due to its position is: **[Ans: (b) Potential Energy]**

(a) Kinetic Energy
(b) Potential Energy
(c) Chemical Energy
(d) Nuclear Energy

20. When the velocity of a body is doubled, its Kinetic Energy becomes: **[Ans: (c) 4 times]**

(a) 2 times
(b) 3 times
(c) 4 times
(d) Remains same

21. Energy stored in a stretched rubber band is: **[Ans: (b) Potential Energy]**

(a) Kinetic Energy
(b) Potential Energy
(c) Heat Energy
(d) Magnetic Energy

22. In a battery, which energy conversion takes place? **[Ans: (a) Chemical to Electrical]**

(a) Chemical to Electrical
(b) Electrical to Mechanical
(c) Heat to Light
(d) Sound to Electrical

23. The Solar Cell converts: **[Ans: (c) Solar energy into Electrical energy]**

(a) Heat into Sound
(b) Light into Heat
(c) Solar into Electrical
(d) Sound into Light

24. The SI unit of Work and Energy is: **[Ans: (b) Joule]**

(a) Watt
(b) Joule
(c) Newton
(d) Pascal

25. The SI unit of Power is: **[Ans: (a) Watt]**

(a) Watt
(b) Joule
(c) Tesla

(d) Henry

26. Atmospheric Pressure is measured by: **[Ans: (b) Barometer]**

(a) Hydrometer
(b) Barometer
(c) Hygrometer
(d) Altometer

27. The density of milk is measured by: **[Ans: (c) Lactometer]**

(a) Barometer
(b) Thermometer
(c) Lactometer
(d) Anemometer

28. Purity of Gold is expressed in: **[Ans: (b) Carat]**

(a) Grams
(b) Carat
(c) Litre
(d) Metre

29. Sound waves in air are: **[Ans: (a) Longitudinal]**

(a) Longitudinal
(b) Transverse
(c) Electromagnetic
(d) None

30. The unit of frequency is: **[Ans: (b) Hertz]**

(a) Decibel
(b) Hertz
(c) Watt
(d) Metre

31. The speed of sound is maximum in: **[Ans: (c) Solids]**

(a) Gas
(b) Liquid
(c) Solids
(d) Vacuum

32. The persistent hearing of sound due to multiple reflections is called: **[Ans: (b) Reverberation]**

(a) Echo
(b) Reverberation
(c) Pitch
(d) Loudness

33. The short-sightedness defect of the eye is also known as: **[Ans: (a) Myopia]**

(a) Myopia

(b) Hypermetropia
(c) Presbyopia
(d) Astigmatism

34. Which lens is used to correct Myopia? **[Ans: (b) Concave Lens]**

(a) Convex Lens
(b) Concave Lens
(c) Bifocal Lens
(d) Cylindrical Lens

35. The primary colors of light are: **[Ans: (b) Red, Blue, Green]**

(a) Red, Yellow, Blue
(b) Red, Blue, Green
(c) Green, Orange, Red
(d) White, Black, Red

36. The sky appears blue due to: **[Ans: (c) Scattering of light]**

(a) Reflection
(b) Refraction
(c) Scattering
(d) Diffraction

37. The speed of light in vacuum is approximately: **[Ans: (b) 3×10^8 m/s]**

(a) 3×10^5 m/s
(b) 3×10^8 m/s
(c) 3×10^{10} m/s
(d) 3×10^6 m/s

38. Which instrument is used to measure Electric Current? **[Ans: (a) Ammeter]**

(a) Ammeter
(b) Voltmeter
(c) Galvanometer
(d) Potentiometer

39. Resistance of an ideal Voltmeter should be: **[Ans: (d) Infinite]**

(a) Zero
(b) Low
(c) High
(d) Infinite

40. The filament of an electric bulb is made of: **[Ans: (c) Tungsten]**

(a) Copper
(b) Iron
(c) Tungsten
(d) Nichrome

41. Fuse wire is made of an alloy of: **[Ans: (b) Tin and Lead]**

    (a) Tin and Copper
    (b) Tin and Lead
    (c) Lead and Copper
    (d) Copper and Silver

42. Which mirror is used by dentists to see large images of teeth? **[Ans: (b) Concave Mirror]**

    (a) Convex Mirror
    (b) Concave Mirror
    (c) Plane Mirror
    (d) Bifocal Mirror

43. Formation of a rainbow is due to: **[Ans: (d) Dispersion and Total Internal Reflection]**

    (a) Only Reflection
    (b) Only Refraction
    (c) Only Scattering
    (d) Dispersion and TIR

44. The unit of Power of a lens is: **[Ans: (c) Dioptre]**

    (a) Watt
    (b) Candela
    (c) Dioptre
    (d) Joule

45. Magnetic Flux is measured in: **[Ans: (b) Weber]**

    (a) Tesla
    (b) Weber
    (c) Henry
    (d) Gauss

46. Nuclear reactors use which of the following as a moderator? **[Ans: (c) Graphite or Heavy Water]**

    (a) Uranium
    (b) Plutonium
    (c) Graphite/Heavy Water
    (d) Cadmium

47. One nautical mile is equal to: **[Ans: (b) 1.85 km]**

    (a) 1.50 km
    (b) 1.85 km
    (c) 2.00 km
    (d) 1.61 km

48. The absolute zero temperature is: **[Ans: (c) -273.15°C]**

    (a) 0°C

(b) 100°C
(c) -273.15°C
(d) -32°F

49. An instrument for measuring the intensity of an earthquake: **[Ans: (b) Seismograph]**

(a) Barometer
(b) Seismograph
(c) Polygraph
(d) Hygroscope

50. 'Ohm' is the unit of: **[Ans: (b) Resistance]**

(a) Voltage
(b) Resistance
(c) Current
(d) Charge