Chapter 1:Physical Quantities And Measurement

MCQs:

1. Which of the following sets includes only base quantities?
(a) Time, mass, temperature
(b) Speed, force, energy
(c) Velocity, acceleration, power
(d) Work, momentum, torque
Correct option: a. Time, mass, temperature

2. If the density is a derived quantity, what could be the base quantities used to express it?
(a) Mass and length
(b) Time and length
(c) Force and speed
(d) Energy and work
Correct option: a. Mass and length

3. Which of the following is a base quantity?
(a) Area
(b) Power
(c) Length
(d) Volume
Correct option: c. Length

4. If you're measuring the force exerted by a moving car, which base quantity are you considering?
(a) Time
(b) Mass
(c) Acceleration
(d) Velocity
Correct option: b. Mass

5. Which of the following is a derived quantity?
(a) Length
(b) Density
(c) Velocity
(d) Speed
Correct option: b. Density

6. When measuring the work done by lifting a box, which base quantity are you assessing?
(a) Time
(b) Force
(c) Temperature
(d) Power
Correct option: b. Force

7. If you're calculating the speed of a runner, which base quantity are you utilizing?
(a) Force
(b) Mass
(c) Distance
(d) Time
Correct option: d. Time

8. Which of the following is a derived quantity related to motion?
(a) Mass
(b) Velocity
(c) Temperature
(d) Pressure
Correct option: b. Velocity

9. If you're measuring the temperature of a substance, which base quantity are you evaluating?
(a) Length
(b) Time
(c) Mass
(d) Temperature
Correct option: d. Temperature

10. When determining the pressure inside a balloon, which base quantity are you considering?
(a) Force
(b) Length
(c) Temperature
(d) Time
Correct option: a. Force

11. Which of the following is a derived quantity associated with electricity?
(a) Voltage
(b) Mass
(c) Length
(d) Temperature
Correct option: a. Voltage

12. If you're calculating the momentum of an object, which base quantity are you using?
(a) Mass
(b) Time
(c) Force
(d) Speed
Correct option: a. Mass

13. Which of the following is a derived quantity in mechanics?
(a) Energy
(b) Time
(c) Length
(d) Speed
Correct option: a. Energy

14. When measuring the energy consumption of a device, which base quantity are you examining?
(a) Time
(b) Mass
(c) Energy
(d) Length
Correct option: a. Time

15. If you're determining the acceleration of a car, which base quantity are you finding?
(a) Velocity
(b) Time
(c) Force
(d) Mass
Correct option: b. Time

16. Which of the following is NOT a derived unit in the SI system?
(a) Newton
(b) Pascal

(c) Ampere
(d) Joule
Correct option: c. Ampere

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17. A scientist is measuring the amount of substance in a chemical reaction. Which SI base unit will be appropriate for this measurement?
(a) Kelvin
(b) Mole
(c) Candela
(d) Ampere
Correct option: b. Mole

18. Which of the following options correctly matches the SI base unit with its symbol?
(a) Ampere-A, Candela-C, Mole-M
(b) Meter-m, Kilogram-kg, Second-s
(c) Kelvin-K, Ampere-A, Second-s
(d) Both b and c
Correct option: d. Both b and c

19. Which of the following is a base unit for measuring time?
(a) Meter
(b) Second
(c) Kelvin
(d) Ampere
Correct option: b. Second

20. What is the SI unit for measuring temperature?
(a) Kelvin
(b) Newton
(c) Pascal
(d) Joule
Correct option: a. Kelvin

21. Which SI unit is used to measure electric current?
(a) Kelvin
(b) Ampere
(c) Meter
(d) Mole
Correct option: b. Ampere

22. What is the SI unit for measuring luminous intensity?
(a) Candela
(b) Ampere
(c) Newton
(d) Joule
Correct option: a. Candela

23. Which SI unit measures the amount of substance?
(a) Kelvin
(b) Candela
(c) Mole
(d) Newton
Correct option: c. Mole

24. What is the SI unit for measuring mass?
(a) Kelvin
(b) Newton
(c) Kilogram
(d) Ampere
Correct option: c. Kilogram

25. Which SI unit is used to measure distance?
(a) Second
(b) Meter
(c) Kilogram
(d) Joule
Correct option: b. Meter

26. What is the SI unit for measuring force?
(a) Newton
(b) Meter
(c) Ampere
(d) Candela
Correct option: a. Newton

27. Which SI unit measures the brightness of light?
(a) Kelvin
(b) Mole

(c) Candela
(d) Pascal
Correct option: c. Candela

28. What is the SI unit for measuring energy?
(a) Joule
(b) Pascal
(c) Newton
(d) Second
Correct option: a. Joule

29. Which SI unit is used to measure pressure?
(a) Pascal
(b) Joule
(c) Ampere
(d) Meter
Correct option: a. Pascal

30. What is the SI unit for measuring power?
(a) Watt
(b) Joule
(c) Newton
(d) Candela
Correct option: a. Watt

31. Which one of the following is NOT a base quantity in the International System of Units (SI)?
(a) Length
(b) Mass
(c) Time
(d) velocity
Correct option: d. Velocity

32. What is the SI unit of time?
(a) Meter (m)
(b) Second (s)
(c) Kilogram (kg)
(d) Kelvin (K)
Correct option: b. Second (s)

33. Which of the following is a vector quantity?
(a) Mass
(b) Speed
(c) Distance
(d) Velocity
Correct option: d. Velocity

34. Which one of the following is a derived quantity?
(a) Length
(b) Mass
(c) Area
(d) Time
Correct option: c. Area

35. What is the derived unit of speed in the SI system?
(a) Meter per second (m/s)
(b) Meter squared (m^2)
(c) Kilogram per cubic meter (kg/m^3)
(d) Second per meter (s/m)
Correct option: a. Meter per second (m/s)

36. Which of the following is NOT one of the seven base quantities in the International System of Units (SI)?
(a) Time
(b) Force
(c) Length
(d) Mass
Correct option: b. Force

37. What is the SI unit of electric current?
(a) Kelvin (K)
(b) Ampere (A)
(c) Second (s)
(d) Candela (cd)
Correct option: b. Ampere

38. The SI unit for luminous intensity is:
(a) Kelvin (K)

(b) Ampere (A)
(c) Candela (cd)
(d) Mole (mol)
Correct option: c. Candela

39. What is the SI unit for the amount of substance (the number of entities, such as atoms or molecules)?
(a) Mole (mol)
(b) Kilogram (kg)
(c) Meter (m)
(d) Second (s)
Correct option: a. Mole

40. Which of the following is the SI unit for luminous intensity, and is defined by a specific number of vibrations of a cesium atom?
(a) Kelvin (K)
(b) Ampere (A)
(c) Candela (cd)
(d) Mole (mol)
Correct option: c. Candela

41. What is the SI unit of electric current?
(a) Coulomb (C)
(b) Ampere (A)
(c) Volt (V)
(d) Ohm (Ω)
Correct option: b. Ampere

42. The SI unit for luminous intensity, the candela (cd), is often used to measure the brightness of:
(a) Electric current
(b) Light sources
(c) Temperature
(d) Sound waves
Correct option: b. Light sources

43. Which base quantity represents the measure of a physical system's resistance to changes in motion and is measured in kilograms?
(a) Time

(b) Temperature
(c) Mass
(d) Electric current
Correct option: c. Mass

44. The Kelvin (K) is the SI unit of temperature and is based on the properties of:
(a) Water
(b) Hydrogen
(c) Cesium
(d) Neon
Correct option: a.water

45. Which of the following unit is not a derived unit?
(a) Pascal
(b) kilogram
(c) newton
(d) watt
Correct option: b. kilogram

46. Amount of a substance in terms of numbers is measured in:
(a) gram
(b) kilogram
(c) newton
(d) mole
Correct option: d. mole

47. The number of significant figures in 0.00650 s are:
(a) 2
(b) 3
(c) 5
(d) 6
Correct option: b. 3

48. Which of the following numbers show 4 significant digits?
(a) 9000.8
(b) 4
(c) 5174.00
(d) 0.001248
Correct option: d. 0.001248

49. Which of the following prefix represents a largest value?
(a) mega
(b) pico
(c) peta
(d) kilo
Correct option: c. peta

50. Micrometer can be used to measure:
(a) current
(b) force
(c) length
(d) mass
Correct option: c. length

51. The instrument best measures the internal diameter of a pipe is:
(a) screw gauge
(b) vernier calipers
(c) meter rule
(d) measuring tape
Correct option: b. vernier calipers

52. Least count of screw gauge is 0.01 mm. If main scale reading is zero and third line of circular scale coincides with datum line, then the measurement is:
(a) 0 mm
(b) 3 mm
(c) 0.03 mm
(d) 0.3 mm
Correct option: c. 0.03 mm

53. 9.483×10^3 is the standard form of:
(a) 94.83 m
(b) 9.483 m
(c) 948.3 m
(d) 9483 m
Correct option: d. 9483 m

54. Which of the following is a base unit?
(a) pascal

(b) coulomb
(c) meter per second
(d) mole
Correct option: d. mole

55. The number having one significant digit is:
(a) 1.1
(b) 6.0
(c) 7.1
(d) 6×10^2
Correct option: d. 6×10^2

56. Ratio of millimeter to micrometer is:
(a) 1000 metre
(b) 0.001 metre
(c) 1000
(d) 0.001
Correct option: c. 1000

57. 0.2 mm in units of meters is:
(a) 0.0002 m
(b) 2×10^{-4} m
(c) both A and B
(d) none
Correct option: c. both A and B

58. Identify the base quantity in the following:
(a) volume
(b) density
(c) force
(d) current
Correct option: d. current

59. When expressing 5000 in scientific notation, it becomes:
(a) 5×10^2
(b) 5×10^4
(c) 5×10^3
(d) 0.5×10^4
Correct option: c. 5×10^3

60. What is the prefix for 10^6?
(a) milli
(b) kilo
(c) mega
(d) giga
Correct option: d. giga

61. Which is a systematic error?
(a) A misread scale
(b) An unpredictable fluctuation in readings
(c) Random disturbances in the lab
(d) Different readings due to human reaction times
Correct option: a. A misread scale

63. When estimating the size of a large crowd, you are working with:
(a) Scientific notation
(b) Precision
(c) Order of magnitude
(d) SI units
Correct option: c. Order of magnitude

64. To ensure accuracy in an experiment, one should:
(a) Take multiple readings and find the average
(b) Only use multiple instruments
(c) Use the largest instrument available
(d) Always measure at night
Correct option: a. Take multiple readings and find the average

65. After performing a calculation, rounding off numbers is important for:
(a) Accuracy
(b) Precision
(c) Clarity in presentation
(d) Making calculations harder
Correct option: c. Clarity in presentation

66. If an error leads to unpredictable fluctuations in readings, this error can best be categorized as:
(a) Human error
(b) Instrumental error

(c) Systematic error
(d) Random error
Correct option: d. Random error

67. Which of the following numbers has three significant figures?
(a) 100.5
(b) 1000
(c) 0.00105
(d) 1050
Correct option: a. 100.5

68. What is measured using a micrometer?
(a) Area
(b) Current
(c) Length
(d) Mass
Correct option: c. Length

69. A student determines the circumference of a football. Which instrument gives a reading that is the circumference of the football?
(a) Caliper
(b) Micrometer
(c) Ruler
(d) Tape
Correct option: d. Tape

70. A length of copper wire is labeled: length 0.50m and diameter 0.50 mm. Which instrument is most suitable to measure accurately the length and the diameter of the wire?

	Length	Diameter
a)	Meter rule	Meter rule
b)	Meter rule	Meter rule
c)	Callipers	Meter rule
d)	Callipers	Micrometer

Correct option d

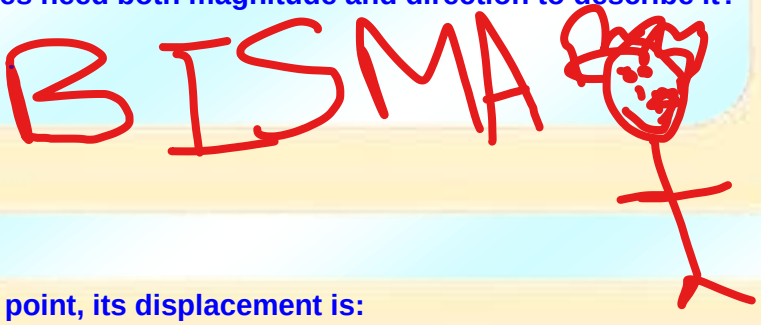
71. In an experiment, a ball is rolled down a curved track that is about half a meter long. Which measuring device is used to measure the length accurately?
(a) Meter rule
(b) Micrometer
(c) Stop-watch
(d) Tape measure
Correct option: a. Meter rule

CHAPTER 2:KINEMATICS

1. Which one is a scalar quantity?
A) Displacement
B) Velocity
C) Speed
D) Acceleration
Correct Option: C

2. Displacement is a:
A) Scalar quantity
B) Vector quantity
C) Constant quantity
D) Non-measurable quantity
Correct Option: B

3. Which of the following quantities need both magnitude and direction to describe it?
A) Time
B) Distance
C) Speed
D) Velocity
Correct Option: D



4. If a body returns to its starting point, its displacement is:
A) Maximum
B) Zero
C) Negative
D) Infinite
Correct Option: B

5. SI unit of speed is:
A) m
B) m/s
C) m/s^2
D) km/h
Correct Option: B

6. The slope of distance-time graph gives:
A) Acceleration
B) Velocity
C) Displacement
D) Time
Correct Option: B

7. If a car travels 60 km in 2 hours, its average speed is:
A) 30 km/h
B) 60 km/h
C) 120 km/h
D) 10 km/h
Correct Option: A

8. Velocity changes when:
A) Speed remains constant
B) Direction remains constant
C) Speed or direction changes
D) None of these
Correct Option: C

9. Which of the following is a vector quantity?
A) Time
B) Distance
C) Displacement
D) Speed
Correct Option: C

10. A body moving with uniform velocity has:
A) Zero acceleration
B) Increasing speed
C) Decreasing velocity

D) Constant acceleration
Correct Option: A

11. Area under velocity-time graph gives:
A) Velocity
B) Displacement
C) Acceleration
D) Time
Correct Option: B

12. Acceleration is defined as the rate of change of:
A) Speed
B) Velocity
C) Displacement
D) Distance
Correct Option: B

13. Which of the following has both magnitude and direction?
A) Speed
B) Velocity
C) Time
D) Distance
Correct Option: B

14. SI unit of acceleration is:
A) m/s
B) m/s^2
C) m
D) km/h^2
Correct Option: B

15. A straight line parallel to time-axis in velocity-time graph represents:
A) Constant velocity
B) Zero velocity
C) Acceleration
D) Increasing velocity
Correct Option: A

16. If a body covers equal distances in equal intervals of time, it is said to be moving with:

A) Uniform speed
B) Accelerated motion
C) Non-uniform speed
D) Rest
Correct Option: A

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17. If a car moves with 20 m/s for 5 seconds, how much distance it covers?

A) 50 m
B) 100 m
C) 200 m
D) 20 m
Correct Option: C (20 m/s × 5s = 100m)

B

18. A body at rest has:

A) Zero velocity
B) Maximum speed
C) Uniform acceleration
D) Constant motion
Correct Option: A

19. Displacement is a shortest distance between:

A) Any two points
B) Initial and final positions
C) Every point
D) None of these
Correct Option: B

20. What does negative acceleration indicate?

A) Increasing speed
B) Decreasing speed
C) Constant speed
D) No motion
Correct Option: B

$a = \frac{v_f - v_i}{t}$

21. A car accelerates from rest to 30 m/s in 10 seconds. Its acceleration is:

A) 3 m/s²
B) 3.0 m/s²
C) 0.3 m/s²

D) 30 m/s²
Correct Option: B

22. A body moving with 5 m/s² acceleration for 4 seconds has a final velocity of:
A) 10 m/s
B) 15 m/s
C) 20 m/s
D) 25 m/s
Correct Option: C (v = at = 5×4)

23. A distance-time graph is a straight line inclined to the time axis. This shows:
A) Uniform speed
B) Acceleration
C) Retardation
D) Non-uniform speed
Correct Option: A

24. The quantity which is always positive is:
A) Displacement
B) Distance
C) Velocity
D) Acceleration
Correct Option: B

25. If a body moves in a circle and returns to starting point, then:
A) Distance = Displacement
B) Displacement = 0
C) Distance = 0
D) Both are zero
Correct Option: B

26. When velocity decreases, acceleration is:
A) Positive
B) Zero
C) Negative
D) Constant
Correct Option: C

27. The speed of a body is always:
A) Zero
B) Negative
C) Positive
D) Changing
Correct Option: C

28. Which is not a vector quantity?
A) Velocity
B) Speed
C) Acceleration
D) Displacement
Correct Option: B

29. If distance and time are known, we can calculate:
A) Velocity
B) Speed
C) Acceleration
D) Displacement
Correct Option: B

30. The motion of a freely falling body is an example of:
A) Uniform speed
B) Uniform acceleration
C) Constant velocity
D) Zero acceleration
Correct Option: B

31. If an object is thrown upward, its velocity at the highest point is:
A) Zero
B) Maximum
C) Constant
D) Uniform
Correct Option: A

32. The path length travelled by an object is known as:
A) Distance
B) Displacement
C) Velocity

D) Acceleration
Correct Option: A

33. Retardation is also called:
A) Constant speed
B) Negative acceleration
C) Variable motion
D) Zero velocity
Correct Option: B

34. In uniform motion, acceleration is:
A) Zero
B) Maximum
C) Constant
D) Negative
Correct Option: A

35. Which one is a correct unit of displacement?
A) m/s
B) m/s^2
C) m
D) kg
Correct Option: C

36. The formula s = vt is used when:
A) Acceleration is zero
B) Acceleration is constant
C) Speed is zero
D) Speed is increasing
Correct Option: A

37. Which graph shows uniform acceleration?
A) Horizontal line in v–t graph
B) Straight sloped line in v–t graph
C) Curve in s–t graph
D) Horizontal line in s–t graph
Correct Option: B

38. A body thrown vertically upward comes back due to:
A) Gravity
B) Inertia
C) Acceleration
D) Speed
Correct Option: A

39. When the speed of a body remains the same, it is said to be in:
A) Non-uniform motion
B) Uniform motion
C) Accelerated motion
D) Rest
Correct Option: B

40. The total length of the path travelled by a body is known as:
A) Velocity
B) Distance
C) Acceleration
D) Displacement
Correct Option: B

CHAPTER 3:DYNAMICS-I

1. Dynamics is the branch of physics which deals with:
A) Motion without force
B) Motion and its causes
C) Rest and motion
D) Types of forces
Correct Option: B

2. The SI unit of force is:
A) Dyne
B) kg
C) Newton
D) Joule
Correct Option: C

3. One Newton is equal to:

A) 1 kg/s²
B) 1 kg·m/s²
C) 1 kg·m²/s
D) 1 m/s²
Correct Option: B

4. Which of the following is a contact force?
A) Magnetic force
B) Friction
C) Gravitational force
D) Electrostatic force
Correct Option: B

5. Force is a:
A) Scalar quantity
B) Vector quantity
C) Fundamental unit
D) Non-measurable quantity
Correct Option: B

6. The force which opposes motion is:
A) Tension
B) Friction
C) Magnetic force
D) Gravity
Correct Option: B

7. The property of a body to resist any change in its state is called:
A) Inertia
B) Acceleration
C) Mass
D) Momentum
Correct Option: A

8. The inertia of a body depends on:
A) Volume
B) Mass
C) Area
D) Speed

Correct Option: B

9. Newton's first law is also known as the law of:
A) Acceleration
B) Inertia
C) Reaction
D) Friction
Correct Option: B

10. A body continues in its state of rest or uniform motion unless:
A) A net external force acts on it
B) It becomes heavy
C) It stops on its own
D) It gains energy
Correct Option: A

11. Acceleration produced in a body is directly proportional to:
A) Velocity
B) Displacement
C) Applied force
D) Inertia
Correct Option: C

12. Newton's second law gives the definition of:
A) Velocity
B) Inertia
C) Force
D) Momentum
Correct Option: C

13. If mass = 2 kg and acceleration = 3 m/s², then force = ?
A) 5 N
B) 1.5 N
C) 6 N
D) 12 N
Correct Option: C

14. A man applies a force but the object doesn't move. The work done is:

A) Zero
B) Maximum
C) Minimum
D) Infinite
Correct Option: A

15. The force acting on a falling object is:
A) Friction
B) Gravity
C) Inertia
D) Tension
Correct Option: B

16. A spring balances measures:
A) Speed
B) Mass
C) Weight
D) Pressure
Correct Option: C

17. Which force is responsible for wearing of shoe soles?
A) Gravity
B) Inertia
C) Friction
D) Air resistance
Correct Option: C

18. 1 kg-weight is equal to:
A) 98 N
B) 9.8 N
C) 1 N
D) 10 N
Correct Option: B

19. Newton's third law states:
A) Every action has an equal and opposite reaction
B) Force = mass × acceleration
C) Body continues in uniform motion
D) Friction opposes motion

Correct Option: A

20. Recoil of gun is an example of:
A) Newton's 1st law
B) Newton's 2nd law
C) Newton's 3rd law
D) Conservation of energy
Correct Option: C

21. The action and reaction forces act on:
A) Different bodies
B) Same body
C) One direction
D) One point only
Correct Option: A

22. The acceleration due to gravity on Earth is:
A) 10 m/s^2
B) 9.8 m/s^2
C) 8.9 m/s^2
D) 6.67 m/s^2
Correct Option: B

23. Mass of a body is:
A) Constant everywhere
B) Variable
C) More on moon
D) Equal to weight
Correct Option: A

24. Weight is defined as:
A) Force due to motion
B) Force due to gravity
C) Force due to friction
D) None of these
Correct Option: B

25. Weight of an object on the moon is:
A) Equal to Earth

B) Zero
C) One-sixth of Earth
D) Double of Earth
Correct Option: C

26. The SI unit of weight is:
A) kg
B) gram
C) Newton
D) m/s²
Correct Option: C

27. If mass is 50 kg, then weight on Earth is:
A) 500 N
B) 490 N
C) 50 N
D) 98 N
Correct Option: B (W = mg = 50 × 9.8)

28. When a body is at rest, the net force acting on it is:
A) Zero
B) Maximum
C) Infinite
D) Variable
Correct Option: A

29. The force responsible for holding planets in orbit is:
A) Friction
B) Gravitational force
C) Magnetic force
D) Electrostatic force
Correct Option: B

30. The mass of a body is measured by:
A) Spring balance
B) Beam balance
C) Barometer
D) Thermometer
Correct Option: B

31. Friction always acts in:
A) Opposite direction of motion
B) Same direction
C) Upward direction
D) Direction of force
Correct Option: A

32. Which of the following is a field force?
A) Friction
B) Gravitational force
C) Tension
D) Contact force
Correct Option: B

33. The inertia of rest means:
A) Body remains at rest until forced
B) Body always moves
C) Body accelerates itself
D) Body changes motion on its own
Correct Option: A

34. When force is doubled and mass remains constant, acceleration:
A) Halves
B) Doubles
C) Triples
D) No change
Correct Option: B

35. The relationship between mass, force, and acceleration is:
A) f = m/v
B) f = v/m
C) f = ma
D) f = m + a
Correct Option: C

36. Unit of frictional force is:
A) kg

B) Joule
C) Newton
D) Dyne
Correct Option: C

37. The gravitational field of Earth is:
A) 9.8 N/kg
B) 10 N/kg
C) 1 N/kg
D) 6.67 N/kg
Correct Option: A

38. The third law pair forces always:
A) Cancel each other
B) Act on different bodies
C) Act on same body
D) Have different magnitudes
Correct Option: B

39. Gravitational force is always:
A) Repulsive
B) Attractive
C) Neutral
D) Zero
Correct Option: B

40. The tendency of a body to stay at rest or continue motion is due to:
A) Inertia
B) Force
C) Acceleration
D) Friction
Correct Option: A

CHAPTER 4:DYNAMICS-II

1. Momentum is the product of:
A) Mass and velocity
B) Force and time

C) Acceleration and time
D) Weight and speed
Correct Option: A

2. SI unit of momentum is:
A) kg·s
B) kg·m/s
C) m/s²
D) N·s
Correct Option: B

3. The formula of momentum is:
A) p = m/a
B) p = F × t
C) p = m × v
D) p = v/m
Correct Option: C

4. Newton's second law in terms of momentum is:
A) F = ma
B) F = Δp/Δt
C) F = mv
D) F = m/v
Correct Option: B

5. The change in momentum is also known as:
A) Force
B) Inertia
C) Impulse
D) Weight
Correct Option: C

6. The product of force and time is called:
A) Work
B) Energy
C) Impulse
D) Power
Correct Option: C

7. SI unit of impulse is:
A) N·s
B) J/s
C) kg·m
D) kg/s
Correct Option: A

8. Impulse is equal to:
A) Force × distance
B) Force × time
C) Force ÷ time
D) Force + time
Correct Option: B

9. If force = 10 N and time = 2 s, impulse = ?
A) 5 N·s
B) 20 N·s
C) 12 N·s
D) 8 N·s
Correct Option: B

10. The law of conservation of momentum states that momentum remains conserved when:
A) No external force acts on the system
B) Gravity acts
C) Force is applied
D) Acceleration is zero
Correct Option: A

11. A light body and a heavy body have the same momentum. Which has more velocity?
A) Light body
B) Heavy body
C) Both equal
D) Cannot say
Correct Option: A

12. A truck and a bicycle moving with the same velocity. Which has more momentum?
A) Truck

B) Bicycle
C) Both same
D) Depends on acceleration
Correct Option: A

13. The momentum of a stationary body is:
A) 1
B) 0
C) Maximum
D) Infinite
Correct Option: B

14. Unit of force in terms of momentum is:
A) N = kg·m/s²
B) N = kg·m
C) N = m/s
D) N = kg·m²
Correct Option: A

15. Momentum is a:
A) Scalar quantity
B) Vector quantity
C) Constant quantity
D) Unitless
Correct Option: B

16. What increases momentum?
A) Increase in velocity
B) Decrease in mass
C) Zero force
D) Rest
Correct Option: A

17. When time of impact increases, force:
A) Decreases
B) Increases
C) Remains same
D) Becomes zero
Correct Option: A

18. Airbags in vehicles reduce injuries by:
A) Increasing momentum
B) Increasing time of impact
C) Decreasing force applied
D) Reducing mass
Correct Option: B

19. A force of 5 N acts for 3 seconds. The impulse is:
A) 2 N·s
B) 15 N·s
C) 8 N·s
D) 5 N·s
Correct Option: B

20. Impulse has the same unit as:
A) Momentum
B) Work
C) Energy
D) Power
Correct Option: A

21. The greater the time of impact, the smaller the:
A) Force experienced
B) Velocity
C) Momentum
D) Distance
Correct Option: A

22. A body of mass 4 kg moves with velocity 5 m/s. Its momentum is:
A) 9 kg·m/s
B) 10 N
C) 20 kg·m/s
D) 2 N
Correct Option: C

23. A cricket player lowers his hands while catching the ball to:
A) Increase force
B) Change direction

C) Reduce impact force
D) Throw faster
Correct Option: C

24. When two objects collide, their total momentum:
A) Becomes zero
B) Remains conserved
C) Becomes negative
D) Doubles
Correct Option: B

25. Which law explains rocket propulsion?
A) Newton’s first law
B) Newton’s third law
C) Conservation of mass
D) Coulomb's law
Correct Option: B

26. Which one is NOT a unit of momentum?
A) kg·m/s
B) N/m
C) Ns
D) All are correct
Correct Option: B

27. The momentum of a 1 kg ball moving at 10 m/s is:
A) 100 N
B) 10 kg·m/s
C) 9.8 kg·m/s
D) 0
Correct Option: B

28. Force can be defined as:
A) Rate of change of velocity
B) Rate of change of momentum
C) Rate of change of energy
D) Rate of change of impulse
Correct Option: B

29. Action and reaction forces are:
A) Unequal in magnitude
B) Equal and opposite
C) Same direction
D) Acting on same body
Correct Option: B

30. Momentum is conserved only when:
A) Air resistance acts
B) Gravity changes
C) No external force acts
D) The mass remains constant
Correct Option: C

31. A moving object comes to rest, its final momentum is:
A) Zero
B) Equal to initial
C) Doubled
D) Same
Correct Option: A

32. Which quantity can be both positive and negative?
A) Mass
B) Momentum
C) Speed
D) Time
Correct Option: B

33. Recoil of a gun is an example of:
A) Acceleration
B) Conservation of momentum
C) Change in mass
D) Impulse
Correct Option: B

34. The SI unit of mass is:
A) Kilogram
B) Newton

C) m/s
D) g·cm/s
Correct Option: A

35. The SI unit of velocity is:
A) m/s^2
B) m/s
C) N
D) kg·m/s
Correct Option: B

36. A football of mass 0.5 kg moves at 8 m/s. What is its momentum?
A) 8 kg·m/s
B) 2 kg·m/s
C) 4 kg·m/s
D) 16 kg·m/s
Correct Option: C

37. The impulse experienced by an object is equal to:
A) Change in momentum
B) Product of distance and force
C) Force squared
D) Mass × gravity
Correct Option: A

38. The greater the force, the greater the:
A) Change in momentum
B) Time of motion
C) Direction of friction
D) Mass of object
Correct Option: A

39. A body moving with uniform velocity has:
A) Increasing momentum
B) Constant momentum
C) Decreasing momentum
D) Zero impulse
Correct Option: B

40. The principle of conservation of momentum is derived from:
A) First law
B) Second and third laws
C) Law of inertia
D) Friction law
Correct Option: B

CHAPTER 5:PRESSURE AND DEFORMATION IN SOLIDS

1. Pressure is defined as:
A) Force × Area
B) Force / Area
C) Area / Force
D) Mass / Volume
Correct Option: B

2. SI unit of pressure is:
A) N·m
B) Pascal
C) kg/m²
D) Joule
Correct Option: B

3. 1 Pascal is equal to:
A) 1 N/m²
B) 1 kg/m
C) 1 N/cm²
D) 1 N/m
Correct Option: A

4. Pressure is directly proportional to:
A) Force
B) Area
C) Density
D) Volume
Correct Option: A

5. If area increases and force remains constant, pressure:
A) Decreases
B) Increases
C) Remains same
D) Becomes zero
Correct Option: A

6. Hydraulic brakes work on:
A) Newton's law
B) Pascal's law
C) Boyle's law
D) Archimedes' principle
Correct Option: B

7. Pascal's Law states:
A) Pressure is transmitted equally in all directions
B) Force remains constant
C) Volume is conserved
D) Liquid flows upwards
Correct Option: A

8. The unit of force is:
A) Newton
B) Pascal
C) Joule
D) Watt
Correct Option: A

9. Pressure in solids depends on:
A) Weight only
B) Area only
C) Force and area
D) Volume and mass
Correct Option: C

10. A sharp knife cuts better because:
A) Force is less
B) Area is less, so pressure is more
C) Weight is more

D) Material is hard
Correct Option: B

11. Pressure in liquids acts:
A) Upward only
B) Downward only
C) In all directions
D) Along the flow
Correct Option: C

12. The SI unit of stress is same as:
A) Energy
B) Pressure
C) Density
D) Force
Correct Option: B

13. Stress is defined as:
A) Force × Area
B) Force / Area
C) Mass / Area
D) Area / Force
Correct Option: B

14. Strain is defined as:
A) Change in length / Original length
B) Force / Area
C) Area / Volume
D) Mass × Acceleration
Correct Option: A

15. Strain has:
A) SI unit of N/m^2
B) No unit (it's a ratio)
C) Unit of Pascal
D) Unit of meter
Correct Option: B

16. Young's Modulus is the ratio of:
A) Stress to Strain
B) Force to area
C) Pressure to volume
D) Mass to length
Correct Option: A

17. The greater the Young's Modulus:
A) More it stretches
B) More rigid the material is
C) Less pressure it exerts
D) Less dense the material
Correct Option: B

18. A rubber band has:
A) High strain, low stress
B) High stress, low strain
C) No elasticity
D) No force
Correct Option: A

19. Compressive stress:
A) Decreases the length
B) Increases the length
C) Increases volume
D) Has no effect
Correct Option: A

20. Tensile stress:
A) Reduces length
B) Increases length
C) Compresses
D) Breaks force
Correct Option: B

21. Which of the following materials is most elastic?
A) Rubber
B) Steel
C) Glass
D) Plastic

Correct Option: B

22. The ability of a material to return to its original shape is called:
A) Elasticity
B) Stress
C) Strain
D) Hardness
Correct Option: A

23. Stress and strain are both caused by:
A) Temperature
B) Applied force
C) Pressure difference
D) Motion
Correct Option: B

24. The force that tends to deform a body is called:
A) Resistance
B) Stress
C) Pressure
D) Weight
Correct Option: B

25. Hooke's law is valid only within:
A) Elastic limit
B) Plastic range
C) Yield point
D) Breaking point
Correct Option: A

26. Breaking point is the point where:
A) Stress is zero
B) Material fails completely
C) Strain becomes infinite
D) No deformation occurs
Correct Option: B

27. Which of the following has the highest pressure on the ground?

A) Elephant's foot
B) Needle's tip
C) Shoe sole
D) Wide tire
Correct Option: B

28. The shape of a dam is wider at the base because:
A) It looks better
B) Water pressure is higher at the bottom
C) Gravity acts more
D) Top is weaker
Correct Option: B

29. When stress exceeds elastic limit:
A) Body regains shape
B) Permanent deformation occurs
C) No strain occurs
D) Body disappears
Correct Option: B

30. The dimensional formula of pressure is:
A) $[M^0L^0T^0]$
B) $[ML^{-1}T^{-2}]$
C) $[MLT^{-1}]$
D) $[M^2L^{-2}T^{-2}]$
Correct Option: B

31. A small area increases pressure because:
A) Force is concentrated
B) Force is reduced
C) Area attracts pressure
D) None
Correct Option: A

32. The change in shape of a body under stress is called:
A) Deformation
B) Vibration
C) Compression
D) Pressure

Correct Option: A

33. If a force of 200 N is applied on an area of 2 m², pressure will be:
A) 50 Pa
B) 100 Pa
C) 400 Pa
D) 100 N
Correct Option: B

34. A body with high elasticity has:
A) Low Young's modulus
B) High Young's modulus
C) High strain
D) Low stress
Correct Option: B

35. Which is a scalar quantity?
A) Pressure
B) Force
C) Acceleration
D) Displacement
Correct Option: A

36. The change in volume per unit volume is called:
A) Stress
B) Strain
C) Volume strain
D) Density
Correct Option: C

37. When force is applied parallel to surface, it produces:
A) Normal stress
B) Shear stress
C) Compressive strain
D) Volume strain
Correct Option: B

38. Tensile and compressive stress are types of:

A) Normal stress
B) Shear stress
C) Pressure
D) Volume force
Correct Option: A

39. Which of the following is not a factor affecting pressure in solids?
A) Force
B) Volume
C) Area
D) Weight
Correct Option: B

40. SI unit of Young's modulus is:
A) m^2
B) N/m^2 (Pascal)
C) $kg \cdot m/s^2$
D) N
Correct Option: B

CHAPTER 6: WORK AND ENERGY

1. Work is said to be done when:
A) A force causes displacement
B) Object is at rest
C) Force is zero
D) Acceleration is constant
Correct Option: A

2. SI unit of work is:
A) Watt
B) Joule
C) Newton
D) Pascal
Correct Option: B

3. If displacement is zero, work done is:
A) Maximum
B) Negative

C) Zero
D) Infinite
Correct Option: C

4. Work =
A) Force × Displacement × cosθ
B) Force + Distance
C) Mass × Acceleration
D) Power × Time
Correct Option: A

5. When θ = 0°, cosθ = ?
A) 1
B) 0
C) –1
D) Infinity
Correct Option: A

6. A coolie carries a load on his head and walks on a horizontal path. Work done by him is:
A) Positive
B) Negative
C) Zero
D) Infinite
Correct Option: C

7. Positive work is done when:
A) Force and displacement are in same direction
B) Force is opposite to motion
C) No motion occurs
D) Velocity is zero
Correct Option: A

8. Negative work is done when:
A) Force and displacement are in opposite directions
B) Both are zero
C) Force is perpendicular
D) Motion is not possible
Correct Option: A

9. SI unit of energy is:
A) Watt
B) Joule
C) Newton
D) Pascal
Correct Option: B

10. Energy possessed by a body due to motion is:
A) Potential Energy
B) Kinetic Energy
C) Chemical Energy
D) Thermal Energy
Correct Option: B

11. Potential energy is due to:
A) Position or configuration
B) Heat
C) Speed
D) Temperature
Correct Option: A

12. Formula for kinetic energy:
A) mgh
B) mv
C) ½ mv^2
D) ½ gh^2
Correct Option: C

13. If the speed of a body is doubled, its kinetic energy becomes:
A) Double
B) Four times
C) Triple
D) Half
Correct Option: B

14. Formula for potential energy:
A) ½ mv^2

B) mgh
C) Fd
D) mv
Correct Option: B

15. Unit of power is:
A) Joule
B) Watt
C) Newton
D) Pascal
Correct Option: B

16. Power is defined as:
A) Rate of doing work
B) Force × Time
C) Work × Displacement
D) Energy per volume
Correct Option: A

17. 1 kilowatt =
A) 100 watts
B) 1000 watts
C) 10 watts
D) 0.1 watt
Correct Option: B

18. Work done =
A) Power × Time
B) Energy ÷ Time
C) Force ÷ Area
D) Mass × Acceleration
Correct Option: A

19. A man lifts a 10 kg object to a height of 2 m. Work done =
A) 10 J
B) 196 J
C) 20 J
D) 98 J
Correct Option: B

(Using W = mgh = 10 × 9.8 × 2 = 196 J)

20. Horsepower is equal to:
A) 746 watts
B) 100 watts
C) 1000 watts
D) 1 watt
Correct Option: A

21. A body is lifted vertically upward. The work done is:
A) Positive
B) Negative
C) Zero
D) Undefined
Correct Option: A

22. If force is perpendicular to displacement, work done is:
A) Maximum
B) Negative
C) Zero
D) Positive
Correct Option: C

23. What type of quantity is work?
A) Scalar
B) Vector
C) Tensor
D) Complex
Correct Option: A

24. If a machine does 500 J of work in 10 seconds, its power is:
A) 50 W
B) 50 W
C) 10 W
D) 5 W
Correct Option: B

25. Which one is a form of mechanical energy?
A) Chemical energy

B) Light energy
C) Potential energy
D) Nuclear energy
Correct Option: C

26. Energy stored in food is:
A) Chemical energy
B) Thermal energy
C) Kinetic energy
D) Potential energy
Correct Option: A

27. Which of the following is a renewable source of energy?
A) Coal
B) Oil
C) Solar energy
D) Gas
Correct Option: C

28. The main disadvantage of fossil fuels is:
A) Expensive
B) Causes pollution
C) Not available
D) Too efficient
Correct Option: B

29. The ultimate source of energy on Earth is:
A) Electricity
B) Sun
C) Wind
D) Water
Correct Option: B

30. Unit of energy used by electric companies is:
A) Watt
B) Joule
C) Kilowatt-hour
D) Horsepower
Correct Option: C

31. Energy cannot be created or destroyed is the law of:
A) Newton's Law
B) Conservation of Energy
C) Thermodynamics
D) Hooke's Law
Correct Option: B

32. A 60 W bulb uses how much energy in 2 hours?
A) 60 J
B) 0.12 kWh
C) 2 kWh
D) 120 kWh
Correct Option: B
(Energy = Power × Time = 60 W × 2 h = 120 Wh = 0.12 kWh)

33. When a ball is at the highest point during free fall, it has:
A) Maximum kinetic energy
B) Maximum potential energy
C) Minimum potential energy
D) No energy
Correct Option: B

34. Energy due to position is:
A) Kinetic energy
B) Potential energy
C) Heat energy
D) Electrical energy
Correct Option: B

35. Work-energy principle states:
A) Work = Force × Area
B) Force = Mass × Acceleration
C) Work done = Change in kinetic energy
D) Power = Energy × Time
Correct Option: C

36. Kinetic energy depends on:

A) Mass and velocity
B) Acceleration and time
C) Height and speed
D) Volume and area
Correct Option: A

37. A pendulum at its lowest position has:
A) Maximum potential energy
B) Maximum kinetic energy
C) Zero kinetic energy
D) Equal energy
Correct Option: B

38. A fuel with high energy output per unit mass is:
A) Wood
B) Coal
C) Gasoline
D) Biomass
Correct Option: C

39. Efficiency is the ratio of:
A) Input to output
B) Useful output energy to input energy
C) Work done to force
D) Displacement to time
Correct Option: B

40. The efficiency of an ideal machine is:
A) 0%
B) 100%
C) 75%
D) 50%
Correct Option: B

CHAPTER 7:DENSITY AND TEMPERATURES

1. Density is defined as:
A) Mass per unit volume
B) Volume per unit mass

C) Weight per unit area
D) Force per unit volume
Correct Option: A

2. SI unit of density is:
A) g/cm³
B) kg/m³
C) N/m²
D) m/s²
Correct Option: B

3. Formula of density is:
A) m × v
B) m / v
C) v / m
D) m + v
Correct Option: B

4. An object has a mass of 100 g and volume 50 cm³. Its density is:
A) 1.0 g/cm³
B) 2.0 g/cm³
C) 0.5 g/cm³
D) 5.0 g/cm³
Correct Option: B

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5. A substance will float in water if its density is:
A) Less than 1 g/cm³
B) More than 1 g/cm³
C) Equal to 1 kg/m³
D) Zero
Correct Option: A

6. Relative density is also called:
A) Specific gravity
B) Mass density
C) Apparent density
D) Thermal density
Correct Option: A

7. Relative density has:
A) SI unit
B) No unit
C) Unit of kg/m^3
D) Unit of m^3
Correct Option: B

8. The instrument used to measure density of liquids is:
A) Thermometer
B) Manometer
C) Hydrometer
D) Barometer
Correct Option: C

9. Ice floats on water because:
A) It is colder
B) Its density is less than water
C) It is a solid
D) It is transparent
Correct Option: B

10. If volume of a body increases but mass remains constant, its density:
A) Increases
B) Decreases
C) Remains the same
D) Becomes zero
Correct Option: B

11. Temperature is the measure of:
A) Mass
B) Degree of hotness
C) Density
D) Pressure
Correct Option: B

12. SI unit of temperature is:
A) °C
B) °F

C) Kelvin
D) Rankine
Correct Option: C

13. 0°C is equal to:
A) 100 K
B) –100 K
C) 273 K
D) 373 K
Correct Option: C

14. Boiling point of water in Kelvin is:
A) 273 K
B) 373 K
C) 100 K
D) 273°C
Correct Option: B

15. Celsius and Fahrenheit scales are related by:
A) °F = 9/5(°C) + 32
B) °C = °F + 273
C) °F = °C + 32
D) °C = 9/5(°F) + 32
Correct Option: A

16. Normal human body temperature is:
A) 37°F
B) 37°C
C) 100°C
D) 273°C
Correct Option: B

17. Absolute zero is:
A) 273°C
B) –273°C
C) 0°C
D) 0°F
Correct Option: B

18. The instrument used to measure temperature is:
A) Hydrometer
B) Thermometer
C) Barometer
D) Manometer
Correct Option: B

19. On Kelvin scale, freezing point of water is:
A) 0 K
B) 273 K
C) 100 K
D) 373 K
Correct Option: B

20. Which liquid is used in the thermometer?
A) Expansion on heating
B) Compression
C) Conductivity
D) Viscosity
Correct Option: A

21. Which substance has the highest density?
A) Water
B) Oil
C) Ice
D) Mercury
Correct Option: D

22. Which of the following expands the most on heating?
A) Solid
B) Gas
C) Liquid
D) Metal
Correct Option: B

23. The Kelvin scale starts from:
A) Absolute zero
B) Freezing point
C) Boiling point

D) 0°C
Correct Option: A

24. What happens to the density of water when it freezes?
A) Increases
B) Decreases
C) Remains same
D) Becomes zero
Correct Option: B

25. Which one is denser?
A) 1 kg iron or
B) 1 kg cotton
Correct Option: A
(Iron has smaller volume, so more density.)

26. Temperature affects the:
A) Volume of substances
B) Mass of substances
C) Weight only
D) Area only
Correct Option: A

27. Ice has a density of:
A) 1 g/cm³
B) 0.92 g/cm³
C) 0.82 g/cm³
D) 1.1 g/cm³
Correct Option: B

28. Which is the correct relation?
A) 1 cm³ = 1 mL
B) 1 m³ = 100 cm³
C) 1 L = 10 cm³
D) 1 cm³ = 10 mL
Correct Option: A

29. An object of volume 2 m³ and mass 1000 kg has density:

A) 2000 kg/m³
B) 500 kg/m³
C) 2 kg/m³
D) 100 kg/m³
Correct Option: B

30. The formula to convert °C to K is:
A) K = °C + 273
B) K = °C – 273
C) K = °C + 100
D) K = °C / 273
Correct Option: A

31. In which state of matter is density maximum?
A) Solid
B) Liquid
C) Gas
D) Plasma
Correct Option: A

32. When temperature increases, the density of a substance:
A) Increases
B) Decreases
C) Remains same
D) Becomes zero
Correct Option: B

33. Which of the following has the lowest density?
A) Water
B) Air
C) Iron
D) Mercury
Correct Option: B

34. At constant temperature, increasing volume:
A) Increases density
B) Decreases density
C) Has no effect
D) Doubles mass

Correct Option: B

35. The thermal expansion of liquids is measured by:
A) Scale
B) Spring balance
C) Thermometer
D) Manometer
Correct Option: C

36. Which unit is commonly used for liquid density?
A) kg/m^3
B) g/cm^3
C) N/m^2
D) m/s^2
Correct Option: B

37. Temperature in science is always measured in:
A) Celsius
B) Fahrenheit
C) Kelvin
D) Rankine
Correct Option: C

38. A body has density equal to water. It will:
A) Float
B) Sink
C) Remain suspended
D) Evaporate
Correct Option: C

39. The temperature at which all molecular motion stops is:
A) 0°C
B) –100°C
C) –273°C
D) 273°C
Correct Option: C

40. Expansion of mercury is used in:

A) Barometer
B) Hydrometer
C) Clinical thermometer
D) Spring balance
Correct Option: C

CHAPTER 8:MAGNETISM

1. A magnet has:
A) Only north pole
B) Only south pole
C) Both north and south poles
D) No poles
Correct Option: C

2. The region around a magnet where its force can be felt is called:
A) Magnetic area
B) Magnetic field
C) Magnetic line
D) Magnetic strength
Correct Option: B

3. Magnetic lines of force always move from:
A) South to North
B) North to South outside the magnet
C) North to South inside the magnet
D) Both A and C
Correct Option: B

4. A freely suspended bar magnet always points towards:
A) South-East
B) North-South
C) East-West
D) North-West
Correct Option: B

5. Like poles of magnets:
A) Attract each other
B) Repel each other

C) Become neutral
D) Lose strength
Correct Option: B

6. The force between unlike poles is:
A) Zero
B) Attractive
C) Repulsive
D) Equal to weight
Correct Option: B

7. Which one is a magnetic material?
A) Copper
B) Iron
C) Wood
D) Glass
Correct Option: B

8. Which of the following is not a magnetic material?
A) Plastic
B) Steel
C) Cobalt
D) Nickel
Correct Option: A

9. The Earth behaves like a:
A) Conductor
B) Magnet
C) Motor
D) Battery
Correct Option: B

10. A magnetic compass is used to:
A) Measure speed
B) Measure weight
C) Find direction
D) Generate electricity
Correct Option: C

11. Which device uses magnetism?
A) Thermometer
B) Electric motor
C) Spring balance
D) Burette
Correct Option: B

12. Which of the following can be magnetized?
A) Wood
B) Steel
C) Rubber
D) Glass
Correct Option: B

13. A permanent magnet is made from:
A) Soft iron
B) Steel
C) Copper
D) Aluminium
Correct Option: B

14. Magnetic field lines are:
A) Imaginary lines representing magnetic force
B) Real lines
C) Invisible current
D) Heat waves
Correct Option: A

15. A soft iron core is used in electromagnets because it:
A) Cannot be magnetized
B) Loses magnetism quickly
C) Is a bad conductor
D) Increases resistance
Correct Option: B

16. Magnetic lines of force never:
A) Intersect each other
B) Form closed loops

C) Start from south
D) End on north
Correct Option: A

17. The magnetic strength is maximum at:
A) The center
B) The poles
C) The surface
D) The edges
Correct Option: B

CHAPTER 9: NATURE OF SCIENCE AND PHYSICS

1. Physics deals with:
A) Human body
B) Matter, energy and their relationship
C) Plants and animals
D) Chemical reactions
Correct Option: B

2. Which of the following is a branch of physics?
A) Botany
B) Zoology
C) Thermodynamics
D) Anatomy
Correct Option: C

3. Scientific knowledge is based on:
A) Guesswork
B) Observations and experiments
C) Opinions
D) Feelings
Correct Option: B

4. Which step comes first in the scientific method?
A) Hypothesis
B) Observation
C) Experiment

D) Conclusion
Correct Option: B

5. A testable statement in scientific method is called:
A) Law
B) Hypothesis
C) Theory
D) Conclusion
Correct Option: B

6. Physics helps us understand:
A) Feelings
B) Art
C) Natural phenomena
D) History
Correct Option: C

7. A physical quantity with both magnitude and direction is called:
A) Scalar
B) Vector
C) Quantity
D) Constant
Correct Option: B

8. SI unit of time is:
A) Minute
B) Hour
C) Second
D) Day
Correct Option: C

9. Which is not a branch of physics?
A) Mechanics
B) Biology
C) Optics
D) Electromagnetism
Correct Option: B

10. The standard unit system used worldwide is:
A) British system
B) SI system
C) Imperial system
D) Local system
Correct Option: B

11. Who is known as the father of modern physics?
A) Newton
B) Albert Einstein
C) Galileo
D) Edison
Correct Option: B

12. A scientific law is:
A) A guess
B) A well-proven statement of nature
C) A temporary idea
D) A mathematical formula
Correct Option: B

13. Measurement is necessary for:
A) Drawing
B) Accurate results in experiments
C) Speaking
D) Writing
Correct Option: B

14. Which quantity is a scalar?
A) Speed
B) Force
C) Velocity
D) Displacement
Correct Option: A

15. Hypothesis must be:
A) Complex
B) Testable
C) Imaginary

D) Fixed
Correct Option: B

16. A set of rules that summarize experimental results is called:
A) Theory
B) Scientific law
C) Observation
D) Conclusion
Correct Option: B

17. One nanosecond equals:
A) 10^{-3} s
B) 10^{-9} s
C) 10^{-6} s
D) 10^{-12} s
Correct Option: B

18. Physics helps in the development of:
A) Literature
B) Technology
C) History
D) Geography
Correct Option: B

19. The first step in solving a scientific problem is:
A) Collecting data
B) Recognizing the problem
C) Testing a hypothesis
D) Repeating the experiment
Correct Option: B

20. An instrument used to measure time accurately is:
A) Thermometer
B) Stopwatch
C) Barometer
D) Meter rod
Correct Option: B

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