Al Amal Learning Center

Class 9 Physics Chapter 1 MCQ Quiz Online | Level 2

Class 9 Physics · Chapter 1: Physical Quantities and Measurement

Name: _____ Date: _____ Score: _____ / 40

---

1. What is the SI unit of pressure (pascal) written in base units?

A) kg m s^-²
B) kg m² s^-²
C) kg m^-¹ s^-²
D) kg m^-³

2. How is 0.000045 s written in scientific notation?

A) 4.5 × 10^-? s
B) 45 × 10^-? s
C) 0.45 × 10^-? s
D) 4.5 × 10^-? s

3. What is 25 μm in metres, in scientific notation?

A) 2.5 × 10^-? m
B) 2.5 × 10^-? m
C) 2.5 × 10^-³ m
D) 2.5 × 10^-? m

4. What is the ratio of the prefix mega to the prefix milli?

A) 10^{3}
B) 10?
C) 10?
D) 10^{12}

5. Two perpendicular vectors of magnitude 6 N and 8 N are added. What is the magnitude of the resultant?

A) 14 N
B) 10 N
C) 2 N
D) 48 N

6. Which pair consists of one scalar and one vector quantity?

A) Mass and temperature
B) Distance and time
C) Momentum and force
D) Energy and weight

7. A balance gives readings of 50.2 g, 50.3 g, 50.2 g and 50.3 g for a standard 50.0 g mass. How can these readings be described?

A) Accurate and precise
B) Accurate but not precise
C) Precise but not accurate
D) Neither accurate nor precise

8. Which of the following is an example of a systematic error?

A) Reaction time that differs slightly at each stopwatch start
B) Unpredictable fluctuations in repeated readings
C) A constant zero error in an instrument
D) Readings that vary slightly by chance

9. The time for 10 oscillations of a simple pendulum is 18.6 s. What is its period?

A) 186 s
B) 18.6 s
C) 1.86 s
D) 0.186 s

10. How many significant figures are there in 0.04050 kg?

A) 4
B) 2
C) 3
D) 5

11. What is 0.004865 when rounded to two significant figures?

A) 0.0048
B) 0.0049
C) 0.0050
D) 0.00487

12. A length is recorded as 7.35 cm. Which digit is the doubtful (estimated) one?

A) 7
B) 3
C) 5
D) All of them

13. A measuring cylinder reads 60 cm^3 of water. After a stone is fully immersed, it reads 85 cm^3. What is the volume of the stone?

A) 145 cm^3
B) 60 cm^3
C) 85 cm^3
D) 25 cm^3

14. What is 3.6 × 10? ms in seconds?

A) 3.6 × 10^1 s
B) 3.6 × 10? s
C) 3.6 × 10^$^{-1}$ s
D) 3.6 × 10^-? s

15. How many seconds are there in 2 days, in scientific notation?

A) 1.728 × 10? s
B) 1.728 × 10? s
C) 1.728 × 10^3 s
D) 1.728 × 10? s

16. What is the joule (SI unit of energy) written in base units?

A) kg m s^-2
B) kg m^-1 s^-2
C) kg m² s^-2
D) kg m² s^-1

17. Which group contains only base quantities?

A) Length, mass, force
B) Current, velocity, mass
C) Density, time, length
D) Time, temperature, amount of substance

18. A boy walks 3 km east and then 4 km north. What are the distance travelled and the magnitude of his displacement?

A) Distance 7 km, displacement 5 km
B) Distance 5 km, displacement 7 km
C) Distance 7 km, displacement 7 km
D) Distance 12 km, displacement 5 km

19. A boat moves 9 m/s across a river while the current flows 12 m/s perpendicular to it. What is the magnitude of the resultant velocity?

A) 21 m/s
B) 3 m/s
C) 15 m/s
D) 108 m/s

20. A student walks 5 m east and then 5 m west. What are the distance and displacement?

A) Distance 0 m, displacement 10 m
B) Distance 10 m, displacement 10 m
C) Distance 0 m, displacement 0 m
D) Distance 10 m, displacement 0 m

21. All readings of a stopwatch are too high because it runs fast. How can this error be reduced?

A) By taking more readings and averaging them
B) By using a calibrated or better instrument
C) By taking readings more quickly
D) By ignoring the extreme readings

22. Repeated readings of a quantity are widely scattered, but their mean is very close to the true value. How is the measurement best described?

A) Precise but not accurate
B) Neither precise nor accurate
C) Accurate (on average) but not precise
D) Both precise and accurate

23. How many significant figures are there in 4.080 × 10^-³ kg?

A) 3
B) 4
C) 5
D) 2

24. What is 12,865 rounded to three significant figures?

A) 12,800
B) 12,900
C) 12,870
D) 13,000

25. What is 0.07983 rounded to two decimal places?

A) 0.08
B) 0.07
C) 0.079
D) 0.80

26. Which is a reasonable estimate for the mass of an adult person?

A) 7 kg
B) 700 kg
C) 70 kg
D) 7000 kg

27. About how many seconds are there in a school day of 6 hours?

A) 2×10^2 s
B) 2×10^3 s
C) 2 × 10? s
D) 2 × 10? s

28. What is 72 km/h in m/s?

A) 7.2 m/s
B) 20 m/s
C) 72 m/s
D) 200 m/s

29. What is 2.5 litres in cubic metres?

A) 2.5×10^{-3} m³
B) 2.5 × 10^-? m³
C) 2.5 m³
D) 2.5×10^3 m³

30. Why is the time for ten oscillations of a pendulum measured instead of one?

A) To increase the amplitude of the pendulum
B) To remove the systematic error of the stopwatch
C) To make the pendulum swing faster
D) To make the error from human reaction time a smaller fraction of the measured time

31. What is 5 × 10^-? kg in milligrams?

A) 5 mg
B) 50 mg
C) 0.5 mg
D) 0.05 mg

32. Which group contains only SI base units?

A) metre, kilogram, newton
B) kelvin, mole, ampere
C) second, joule, candela
D) metre, pascal, kelvin

33. Which base quantities are involved in the derived quantity force?

A) Mass and length only
B) Length and time only
C) Mass, time and temperature
D) Mass, length and time

34. A body of mass 500 g has a volume of 250 cm^3. What is its density in SI units?

A) 2 kg m^{-3}
B) 200 kg m^{-3}
C) 2000 kg m^{-3}
D) 20,000 kg m^{-3}

35. What is the watt (joule per second) written in base units?

A) kg m^2 s^{-2}
B) kg m^2 s^{-3}
C) kg m s^{-3}
D) kg m^{-1} s^{-3}

36. Which base quantities combine to give the derived quantity electric charge (coulomb)?

A) Current and time
B) Current and length
C) Mass and time
D) Current and mass

37. What are the base units of volume flow rate (volume per second)?

A) m s^{-1}
B) m^3 s^{-1}
C) m^2 s^{-1}
D) m^3 s

38. A student claims the newton is a base unit. Why is she wrong?

A) Because it has no unit
B) Because it is a vector
C) Because it is measured with a stopwatch
D) Because it can be expressed in terms of kg, m and s

39. A rectangle measures 2.0 cm by 50 mm. What is its area in m², in scientific notation?

A) 1 × 10^-³ m²
B) 1 × 10^-² m²
C) 1 × 10^-? m²
D) 1 × 10^-? m²

40. Which pair consists of two derived quantities?

A) Mass and density
B) Speed and acceleration
C) Time and speed
D) Length and area

Answer key

1-C 2-D 3-A 4-C 5-B 6-D 7-C 8-C 9-C 10-A

11-B 12-C 13-D 14-A 15-B 16-C 17-D 18-A 19-C 20-D

21-B 22-C 23-B 24-B 25-A 26-C 27-D 28-B 29-A 30-D

31-C 32-B 33-D 34-C 35-B 36-A 37-B 38-D 39-A 40-B