1. What does physics study?
   A. The classification of languages
   B. The structure and use of numbers
   C. Nature and natural phenomena
   D. The history of scientific equipment (C)

*Explanation :* Physics is defined as the study and analysis of nature and natural phenomena.

2. Which of the following is a non-physical quantity?
   A. Mass B. Length
   C. Universe D. Time (C)

*Explanation:* Non-physical quantities cannot be measured; examples given include universe, sky, and happiness.

3. Which statement best describes fundamental quantities?
   A. They depend on other physical quantities
   B. They do not depend on any other quantities
   C. They are measured only in the CGS system
   D. They cannot be used to define units (B)

*Explanation:* Fundamental quantities are independent of other quantities (e.g., mass, length, time in mechanics).

4. Which of the following is a derived quantity?
   A. Mass
   B. Length
   C. Time
   D. Force (D)

*Explanation :* Derived quantities depend on fundamental quantities; examples include force, work, and momentum.

5. What is a unit?
   A. A measuring instrument
   B. A fixed standard used to measure a physical quantity
   C. A type of error in measurement
   D. A conversion factor between systems (B)

*Explanation:* A unit is the fixed standard set to measure a physical quantity.

6. If the numerical value increases, what happens to the size of the unit for the same physical quantity?
   A. It increases
   B. It decreases
   C. It remains unchanged
   D. It becomes dimensionless (B)

*Explanation:* Numerical value and unit size are inversely proportional; n1u1=n2u2n_1u_1 = n_2u_2.

7. Which pair lists the maximum values of plane angle and solid angle, respectively?
   A. $4\pi$, $2\pi$
   B. $2\pi$, $4\pi$
   C. $2\pi r$, $4\pi r^2$
   D. Depends on the radius chosen (B)

*Explanation:* The full angle around a point in a plane is $2\pi$ radians; the full solid angle around a point in space is $4\pi$ steradians.

8. Which is the correct SI base unit for luminous intensity?
   A. Watt (W)
   B. Candela (cd)
   C. Lumen (lm)
   D. Lux (lx) (B)

*Explanation:* Luminous intensity is a fundamental quantity with the SI unit candela (cd).

9. Which expression correctly represents a derived unit?
   A. Newton = kg m $s^{-2}$
   B. Newton = kg $m^2$ $s^{-2}$
   C. Joule = kg m $s^{-2}$
   D. Joule = kg m $s^{-2}$ (A)

*Explanation:* Force (newton) is kg m $s^{-2}$ ; energy (joule) is Kg $m^2$ $s^{-2}$

10. Which system measures mass, length, and time in gram, centimetre, and second?
    A. MKS B. FPS
    C. SI D. CGS (D)

*Explanation :* In the CGS system, mass, length, and time are measured in gram, centimetre, and second.