

Note: - Section B is compulsory. Attempt any TWO questions from Section C.

نوٹ: حصہ دوم لازمی ہے۔ حصہ سوم میں سے دو سوالوں کے جوابات لکھئے۔

SECTION-B

2. Write short answers to any FIVE parts. (5x2=10)
- Define nuclear physics.
 - What are prefixes? Give examples.
 - Why is the use of zero error necessary in measuring instruments?
 - Define force and write down its SI unit also.
 - Differentiate between mass and weight.
 - When a gun is fired, it recoils, why?
 - What is global positioning system?
 - Differentiate between field force and gravitational field strength.
3. Write short answers to any FIVE parts. (5x2=10)
- Name types of motion.
 - Give an example of a body that is at rest and in motion at the same time.
 - What do we study in Kinematics?
 - Define density and write down its formula.
 - Why do we make a mercury barometer instead of water barometer?
 - Name application of Pascal's law in daily life.
 - Name ways of transfer of heat.
 - Why does sea breeze blow during the day?
4. Write short answers to any FIVE parts. (5x2=10)
- State second condition of equilibrium.
 - Define axis of rotation.
 - Give an example of a body which is at rest but not in equilibrium.
 - Write down any two uses of solar panel.
 - Why do we need energy?
 - How can you find the efficiency of a system?
 - What extra features are added in a clinical thermometer?
 - Define specific heat capacity.

SECTION - C

Note: Attempt any TWO questions. Each question carries NINE (9) Marks.

نوٹ: کوئی سے دو سوالات کے جوابات لکھئے۔ ہر سوال کے نو (9) نمبر ہیں۔

5. (a) Explain motion of artificial satellites and find speed of a satellite. (4)
- (b) How much force is needed to prevent a body of mass 10 kg from falling? (5)
6. (a) Draw a speed-time graph for a body moving with uniform acceleration. (4)
- From this graph, derive the equation of motion $S = V_1t + \frac{1}{2}at^2$
- (b) What would be the volume of ice formed by freezing 1 litre of water? (5)
7. (a) Define co-efficient of linear thermal expansion and derive its equation. (4)
- (b) A car weighing 12 kN has a speed of $20ms^{-1}$. Find its kinetic energy. (5)