

**Sargodha Board 2018 (Second Group)**

Roll No.(in Figures): ..... (in Words): .....

Maximum Marks: 48 **SUBJECTIVE TYPE** Time Allowed :1.45 Hours

**(PART - I)**

**Q2. Write short answers to any FIVE (5) questions: (5×2=10)**

- (i) Differentiate between base units and derived units. (ii) What is meant by prefixes.
- (iii) What is meant by least count write the least count of metre rule.
- (iv) Define translatory motion and give an example.
- (v) Differentiate between scalars and vectors.
- (vi) Define centripetal force and write its mathematical form.
- (vii) State law of conservation of momentum. (viii) What is meant by inertia.

**Q3. Write short answers to any FIVE (5) questions: (5×2=10)**

- (i) Define resultant force?
- (ii) Differentiate between centre of mass and centre of gravity?
- (iii) State Newton's law of gravitation? (iv) What are artificial satellites?
- (v) What is global positioning system? Write its use?
- (vi) Define work and write its SI unit? (vii) Define heat energy? Write its some sources?
- (viii) What is meant by efficiency of a system? Write its formula?

**Q4. Write short answers to any FIVE (5) questions: (5×2=10)**

- (i) Why water is not suitable to be used in a barometer?
- (ii) State Pascal's law? (iii) What is meant by principle of floatation?
- (iv) Change 300 K into celsius scale of temperature.
- (v) Define heat capacity and write its unit?
- (vi) Write two factors at which ratio of radiations emitted depends?
- (vii) Define green house effect? (viii) Differentiate between land and sea breezes?

**(PART - II)**

**Note: Attempt any TWO questions. (2×9=18)**

**Q5. (a) Derive the third equation of motion with the help of speed-time graph. 4**

**(b) A body of mass 5kg is moving with a velocity of  $10\text{ms}^{-1}$  Find the force required to stop it in 2 seconds. 5**

**Q6. (a) Define potential energy and give an example. Also derive its formula. 4**

**(b) A force of 100N is applied perpendicularly on a spanner at a distance of 10cm from a nut. Find the torque produced by the force. 5**

**Q7. (a) Explain the linear thermal expansion in solids. 4**

**(b) A Steel wire of 1m long and cross-sectional area  $5 \times 10^{-5}\text{m}^2$  is stretched through 1mm by a force of 10,000N. Find the youngs modulus of the wire. 5**