

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

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

SECTION-B حصہ دوم

2. Write short answers to any FIVE parts. (5x2=10)
- Write down two differences between base quantities and derived quantities. i.
 - Define positive zero error and negative zero error in screw gauge. ii.
 - Define the least count of stop watch. Write down the least count of mechanical and digital stop watches. iii.
 - Why is it dangerous to travel on the roof of a bus? iv.
 - When a gun is fired, it recoils. Why? v.
 - Define momentum and write down its SI unit. vi.
 - Define field force and gravitational field strength. vii.
 - Why communication satellites are stationed at geostationary orbits? viii.
3. Write short answers to any FIVE parts. (5x2=10)
- A sprinter completes 100-metre race in 12s. Find his average speed. i.
 - Write down the equations of motion for bodies moving under gravity. ii.
 - What would be the shape of a speed time graph of a body, moving with variable speed? iii.
 - Explain the fourth state of matter. iv.
 - How many litres are there in one-metre cube? v.
 - Differentiate between stress and strain. vi.
 - Give two uses of convection current. vii.
 - What is greenhouse effect? viii.
4. Write short answers to any FIVE parts. (5x2=10)
- Define torque and write down its SI unit. i.
 - What is stable equilibrium? ii.
 - Why the height of vehicles is kept as low as possible? iii.
 - Define work and write down its SI unit. iv.
 - What is soil erosion? v.
 - Why do we need energy? vi.
 - Define internal energy. vii.
 - What is anomalous expansion of water? viii.

SECTION - C حصہ سوم

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) For vertical motion of two bodies attached to the ends of a string that passes over a friction less pulley, find tension in the string. (4) 5- (الف) ایک بے فرکشن پلے سے گزرتی ہوئی ڈوری کے سروں سے بندھے ہوئے (4) دو اجسام کی عموداً حرکت کے لیے ڈوری میں ٹینشن معلوم کیجئے۔
- (b) Calculate the value of 'g' at a height of 3600 km above the surface of earth. (5) (ب) زمین کی سطح سے 3600 km کی بلندی پر 'g' کی قیمت معلوم کیجئے۔
6. (a) Prove that $S = V_1 t + \frac{1}{2} a t^2$ with the help of speed time graph. (4) 6- (الف) سپیڈ ٹائم گراف کی مدد سے ثابت کیجئے کہ $S = V_1 t + \frac{1}{2} a t^2$
- (b) The density of air is 1.3 kg m^{-3} , find the mass of air in a room measuring $8 \text{ m} \times 5 \text{ m} \times 4 \text{ m}$. (5) (ب) ہوا کی ڈینسٹی 1.3 kg m^{-3} ہے $8 \text{ m} \times 5 \text{ m} \times 4 \text{ m}$ کے کمرے میں موجود ہوا کا ماس معلوم کیجئے۔
7. (a) Explain three states of equilibrium with examples. (4) 7- (الف) ایکوی لبریم کی تین حالتوں کی مثالوں کیساتھ وضاحت کیجئے۔
- (b) How much heat is required to increase the temperature of 0.8 kg of water from 20°C to 75°C ? (5) (ب) 0.8 kg پانی کا ٹیمپریچر 20°C سے 75°C تک بڑھانے کے لیے حرارت کی کتنی مقدار درکار ہوگی؟