BACHELOR IN PROSTHETICS AND ORTHOTICS
FIRST YEAR
PAPER IV – APPLIED MECHANICS AND STRENGTH OF MATERIALS

Q.P. Code: 802454

Time: Three Hours   **Maximum : 100 Marks**
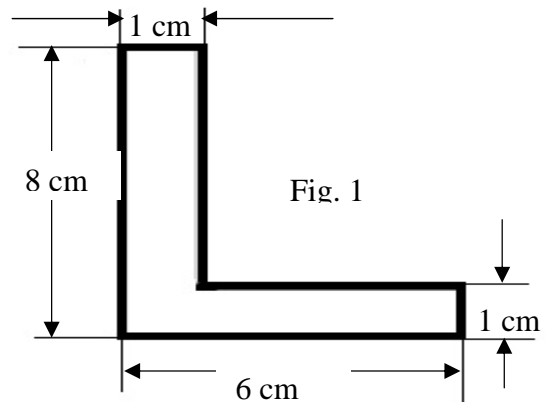
Answer All questions

I. Elaborate on: **(3 x 10 = 30)**

1. Find out the position of the centriod of a section, shown in fig 1.

Fig. 1

2. Open and Close looped Control system.
3. Classification of Springs with neat sketch.

II. Write notes on: **(8 x 5 = 40)**

1. State and derive Lami's Theorem.
2. Center of Gravity.
3. Shear Force and Bending Moment.
4. Young's Modulus.
5. Longitudinal Stress and Longitudinal Strain.
6. Find the Horizontal and vertical components of force 100 N inclined at an angle
    of 30 degree, where cos 30 is 0.8 and sin 30 is 0.5.
7. A Circular Shaft of 50 mm diameter and length 150 mm is subjected to an axial
    load of 10 KN. Determine the stress induced in the shaft.
8. Noise Pollution.

III. Short answers on: **(10 x 3 = 30)**

1. Define Stress.
2. Poisson's ratio.
3. Fatigue.
4. Mechanics.
5. Torque.
6. Shear Stress.
7. Moment of inertia.
8. Acceleration.
9. Centroid.
10. Friction.

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