

S. B. Roll. No.....

APPLIED MECHANICS
3rd Exam/Civil/Mech./Auto/0093/Jun'2021
(For 2018 batch onwards)

Duration: 1.15Hrs.

M.Marks:25

SECTION-A

Q1. Attempt any three questions.

$$3 \times 5 = 15$$

- i. Find the greatest and the least resultant of two forces whose magnitudes are 100 N and 80 N respectively.
- ii. State the characteristics of a couple.
- iii. What are laws of static friction?
- iv. Why do lubricants reduce friction?
- v. What is the difference between 'Centre of Gravity' and Centroid?
- vi. Where does the C.G. of the following section lies?
i) Circle ii) Square iii) Triangle.
- vii. Differential between reversible and irreversible machine.

SECTION-B

Attempt any one question.

$$1 \times 10 = 10$$

- Q2.** The two forces 200N and 300 N are acting simultaneously at a point. What is the resultant of these two forces, if the angle between them is 45° ?
- Q3.** Define the following: a) Limiting force of friction. b) Angle of friction c) Angle of Repose
d) Force of friction. e) Coefficient of friction
- Q4.** A body of weight 300N is lying on a rough horizontal plane having a co-efficient of friction as 0.3. Find the magnitude of the force which can move the body while acting at an angle of 25° with the horizontal.
- Q5.** Find the centre of gravity of a channel section 100x50x15 mm.