# **Question Paper**

Exam Date & Time: 31-May-2022 (09:30 AM - 12:30 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

### INTERNATIONAL CENTRE FOR APPLIED SCIENCES II SEMESTER B.Sc. (Applied Sciences) in Engg. END SEMESTER THEORY EXAMINATION- MAY/JUNE-2022

Strength Of Materials [IME 123 - S2]

Duration: 180 mins.

Marks: 50

A)

### Answer ALL questions. Missing data if any, may be suitably assumed and to be stated.

- 1) Answer the following:
  - a. Define yield strength of a material
    - b. What is point of contra flexure?
      - c. What are the differences between short and long column?
      - d. Draw the stress strain curve for any ductile material
      - e. Define Torque
  - B) (5) For a simply supported beam of span L, subjected to a UDL throughout the span, find the shear force and bending moment at all salient points and draw SFD and BMD.

#### 2) Draw the SFD and BMD for a beam as shown in figure.

(5)

(5)

A)



- B) (5) A bar, 12 mm in diameter is acted upon by an axial load of 20 kN. The change in diameter is measured as 0.03 mm. Determine
  - Poisson's ratio
  - Young's modulus
  - Bulk modulus

Assume modulus of rigidity as 80 GPa

(5)A beam ABC of length 9 m has one support of the left end and the other