

I B. Tech II Semester Supplementary Examinations, March- 2022
BASIC CIVIL AND MECHANICAL ENGINEERING
 (Only EEE)

Time: 3 hours

Max. Marks: 70

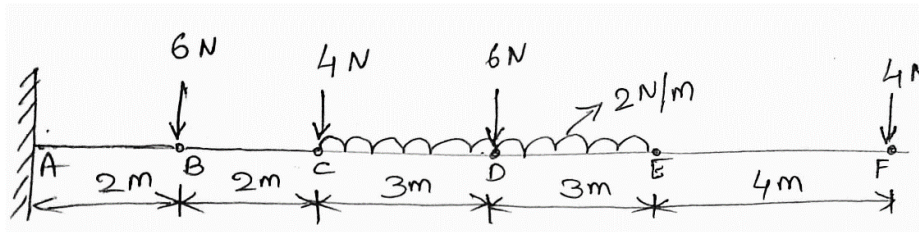
Answer any five Questions one Question from Each Unit
All Questions Carry Equal Marks

UNIT-I

- 1 a) Explain the stress vs strain behavior of engineering materials in tension. (7M)
 b) A circular rod of diameter 16 mm and 500 mm long is subjected to a tensile force 40 kN. The modulus of elasticity for steel may be taken as 200 kN/mm^2 . Find stress, strain and elongation of the bar due to applied load. Also find stress, strain and elongation if the diameter of the rod is increased to 30 mm. (7M)

Or

- 2 Draw the shear force and bending moment diagram for the cantilever beam shown (14M)



UNIT-II

- 3 a) Discuss about measurement of strain. (7M)
 b) Explain about triangular strain rosettes. (7M)
- Or
- 4 a) Write briefly on Resistance Strain gauges. (7M)
 b) Write the working principle of strain gauge. (7M)

UNIT-III

- 5 a) Explain in detail the causes of decay of wood work and their preservation. (7M)
 b) What are the characteristics of first class bricks? (7M)

Or

- 6 a) Briefly explain the tests conducted on bricks for their suitability for construction work? (7M)
 b) Classify and describe knots found in timber based on size, form and quality. (7M)

UNIT-IV

- 7 a) Differentiate between Impulse and Reaction Turbine. (7M)
 b) With a neat sketch explain the working of a single acting reciprocating pump. (7M)



Code No: R201227

R20

SET - 1

Or

- 8 a) Explain the concept of priming in pumps. (7M)
b) With a neat sketch explain the working of impulse turbine. Write its advantages. (7M)

UNIT-V

- 9 a) Draw and explain the valve timing diagram of an IC engine. (7M)
b) Explain the construction and working of a Cochran Boiler. (7M)

Or

- 10 a) Differentiate between petrol and diesel engines. (7M)
b) What are Boilers Boiler Mountings and Accessories? Discuss about any one mounting and one accessory used in boiler. (7M)

2 of 2

