DEPARTMENT OF WATER RESOURCES AND OCEAN ENGINEERING

N.I.T.K., SURATHKAL

ENGINEERING MECHANICS [WO 110]

I - Semester B.Tech. [S7 to S14]
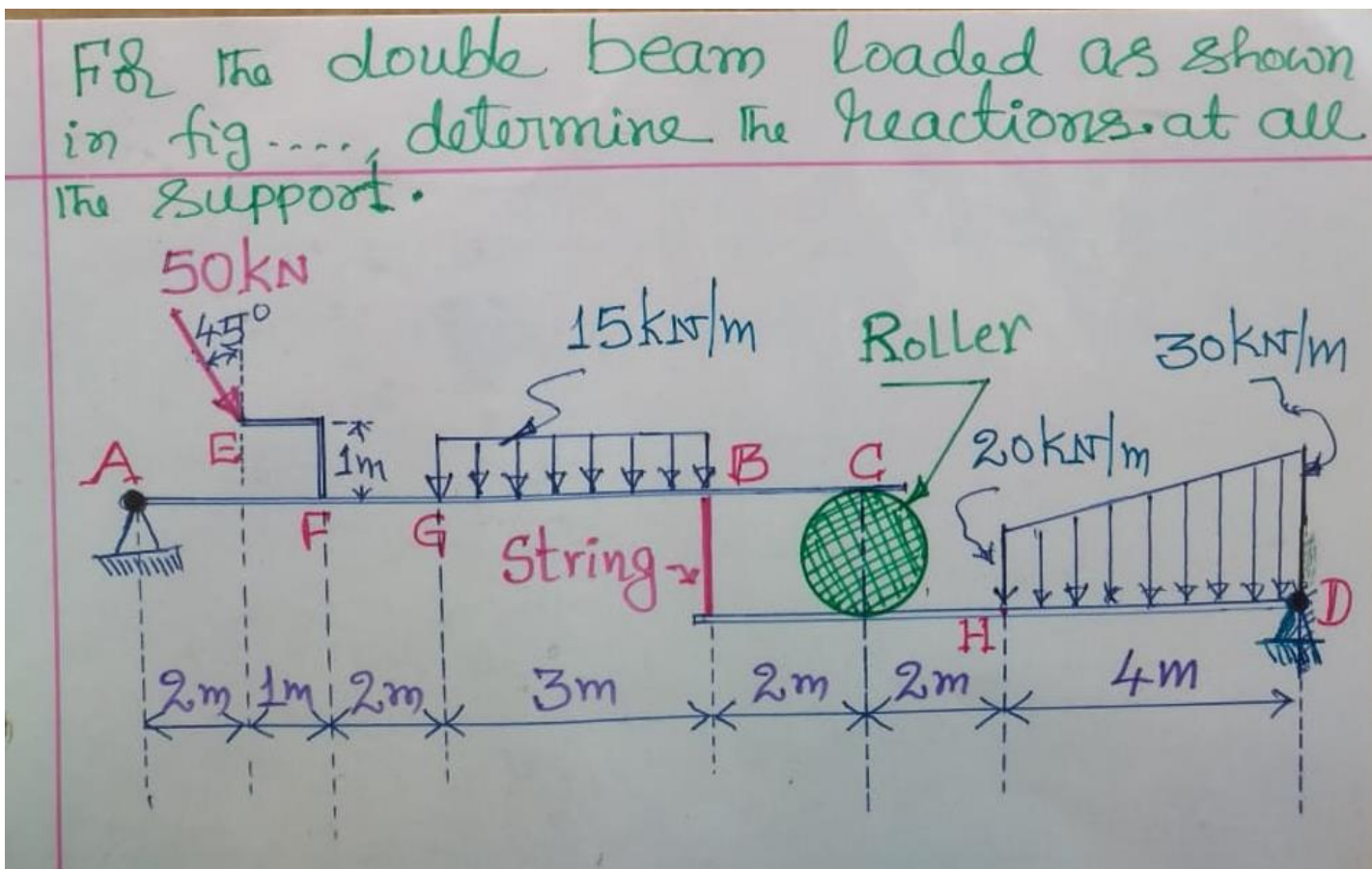
ASSIGNMENT – II

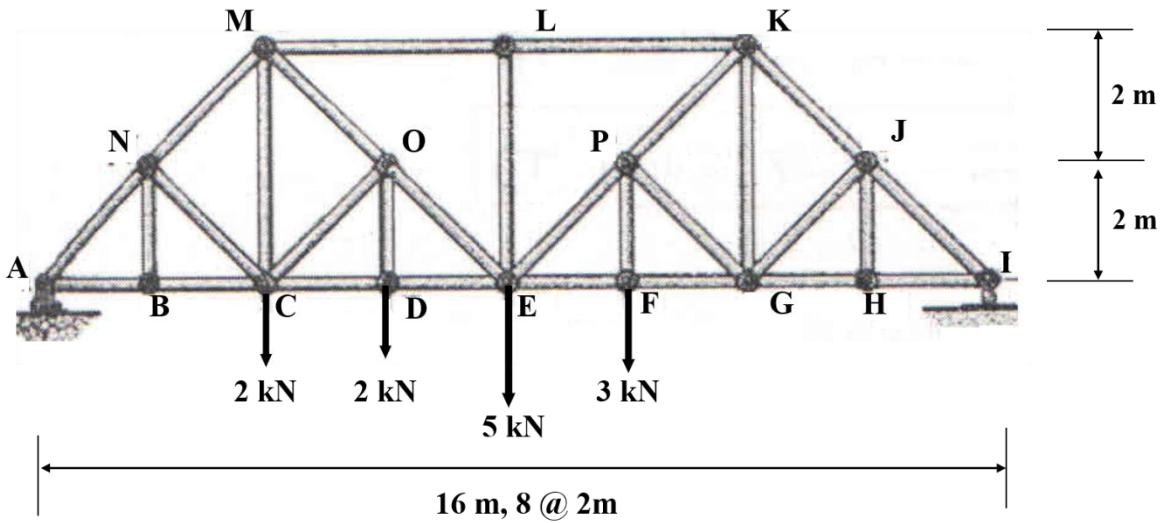**Maximum Marks: 15**   **Date: 26.02.2022**   **Time: 2.00 pm – 4:30 pm**

Question No. 1

For the double beam loaded as shown in fig...., determine the reactions at all the support.

Question No. 2

Determine the force in members OE, LE, and LK of the Baltimore truss hinged at A as shown in Figure.

2 kN   2 kN   3 kN

5 kN

16 m, 8 @ 2m

2 m

2 m

Question No. 3

A simply supported beam **AB** shown in following **Figure** is subjected to various distributed loads in addition to the tension (**T**) in the metallic string and the applied moment (**M$_o$**) acting at point **D**.

Case (i): Find the support reactions. **Note: T = 100 N** and **M$_o$ = 100 Nm.**

Case (ii): What is the required tension **T** to get zero reaction at support **B**? Take **M$_o$ = 100 Nm.**

Case (iii): What is the magnitude of the applied moment (**M$_o$**) at point **D** to cause the zero reaction at **B**? Take **T = 100 N.**

100 N/m

T

45°

A   C   B

D

M$_o$

100 N/m

200 N/m

30°

1 m   1 m   1 m