Total No. of Printed Pages:2

SUBJECT CODE NO:- P-168
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E.(CIVIL) Examination MAY/JUNE-2016
Theory of Structure - II
(Revised)

[Time: Three Hours] **[Max Marks:80]**

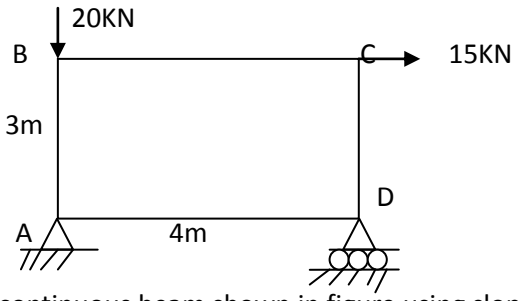
"Please check whether you have got the right question paper."

N.B i) Q.No.1 from section A and Q.No.6 from section B are compulsory.
ii) Answer any two questions from the remaining four questions of each section.
iii) Assume suitable data, if necessary and state it clearly.

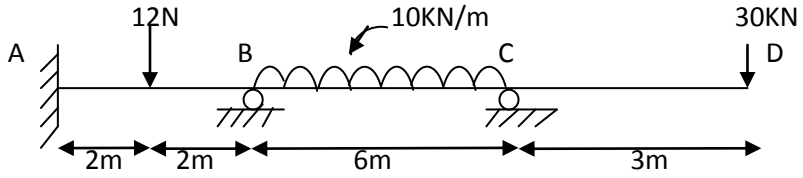
Section A

Q.1 Answer the following (Any Two). 10
a. Explain static and kinematic indeterminacy of rigid plane frames and pin joined frames with suitable example.
b. Explain the effect of lack of fit and temperature change on pin – jointed frames.
c. Write a short note on shape factor and find shape factor for I – section.

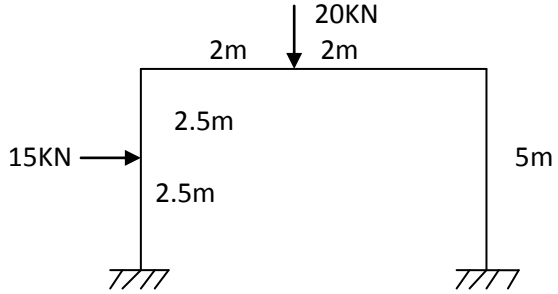
Q.2 Find forces in all members due to applied loading on pin- joined frames shown in figure. Cross section area of all members is 22 cm^2. Young's modulus is same for all members. 15



Q.3 Analyze the continuous beam shown in figure using slope –deflection method. EI = constant 15



Q.4 Analyze the fixed base portal frame shown in figure by column – analogy method. EI = constant 15



Q.5 a) Derive the slope – deflection equation 06
b) Write a note on:- 09
1. Plastic collapse load
2. Shape factor.
3. Castigliano's second theorem.

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Section-B

Q.6 a) Explain the following (Any Two) 06

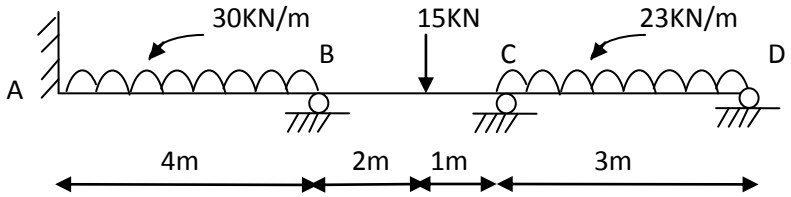
1. Effect of change in temperature on two hinged arches.
2. Effect of shortening of rib
3. Distribution and rotation factor.

b) Write a note on: sway analysis of frames by moment distribution method. 04

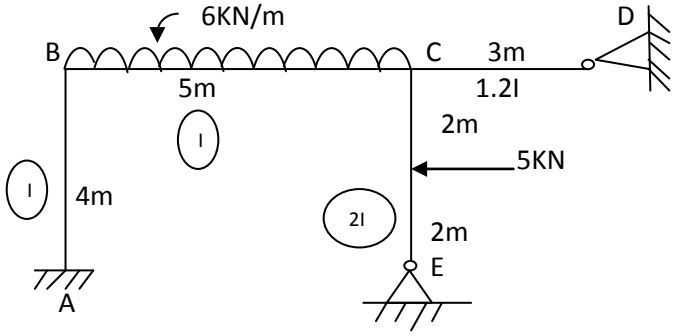
Q.7 A two – hinged parabolic arch of span 25m and rise 6m carries a uniformly distributed load of 40KN/m over the left half of the span and a concentrated load of 80KN at the crown. Assuming I = Ic secθ and neglecting effect of rib shortening. Determine position and magnitude of max. BM, normal thrust and shear force at 15m from left hinge. 15

Q.8 Analyze the continuous beam shown in figure using moment distribution method. Support 'B' sinks by 8mm 15

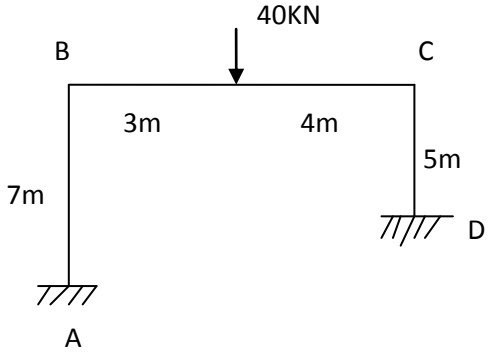
$\mathrm{E} = 2 \times 10^5 \mathrm{N/mm^2}, \mathrm{I} = 1.2 \times 10^{-4} \mathrm{m^4}$



Q.9 Analyze the frame by Kani's method. Draw BMD 15



Q.10 Analyze the frame using moment distribution method, EI = constant 15



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