B.Tech. SEM -V (Civil) 2014 Course (CBCS) : SUMMER - 2019

SUBJECT: STRUCTURAL ANALYSIS-II

Day: Tuesday
Date: 14/05/2019

S-2019-2652

Time: 10.00 AM TO 01.00 PM
Max. Marks: 60

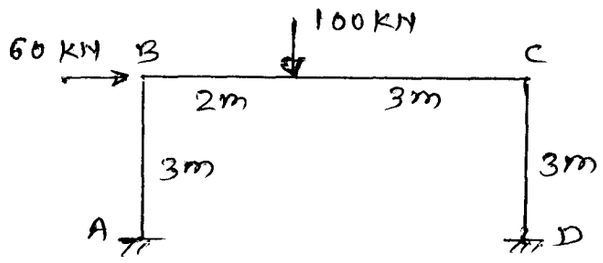
N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Assume suitable data if necessary.
4) Draw neat and labeled diagrams wherever necessary.

Q.1 What is shape factor? Derive an equation for shape factor for solid circular cross section. **(10)**

OR

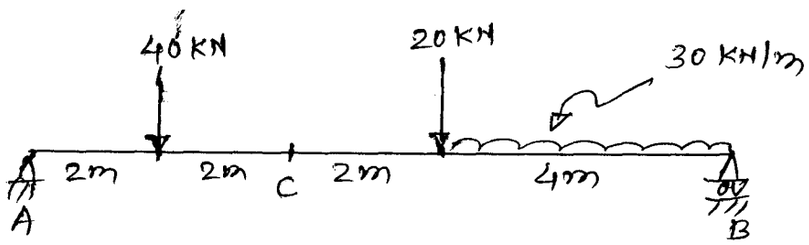
Q.1 A frame is loaded with ultimate loads, calculate Mp for the section. **(10)**



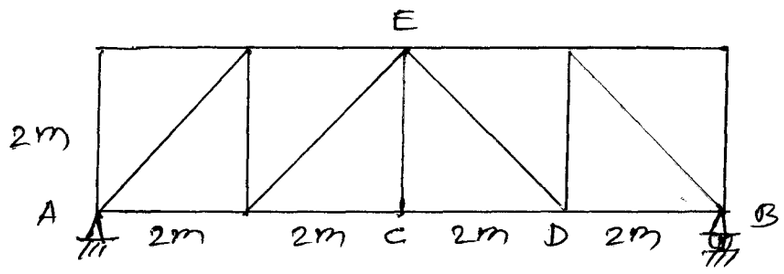
Q.2 What is an ILD? Explain construction and application of ILD for beam. **(10)**

OR

Q.2 Calculate support reaction and BM at 'C', using ILD for the beam shown in figure. **(10)**



Q.3 A truss shown in figure, draw an ILD for member CD and CE. Calculate maximum forces in members CD if load of 50 kN moves over truss. **(10)**

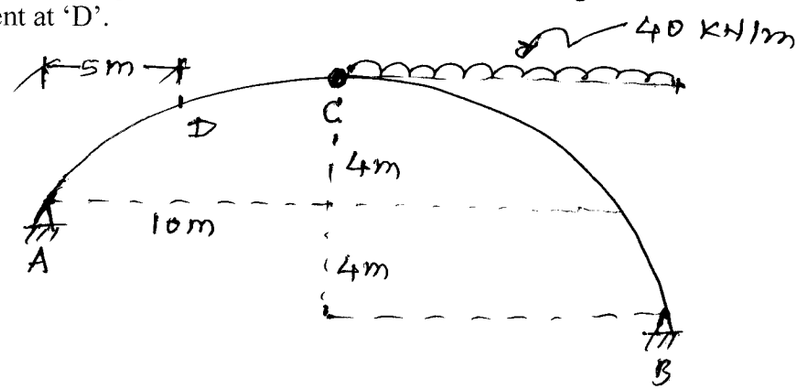


OR

Q.3 For the above truss calculate maximum force in members CD and CE if an UDL intensity 40 kN/m having length 12 m moves over the truss. **(10)**

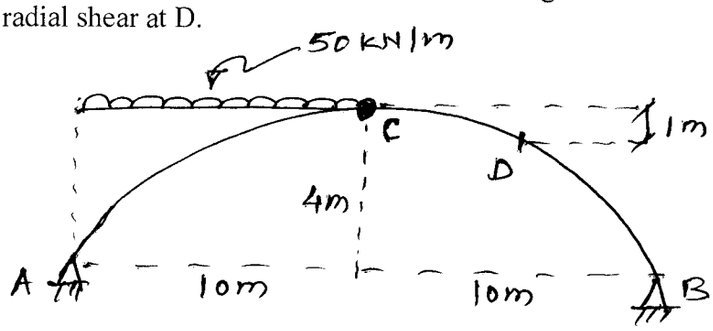
P.T.O.

Q.4 A three hinged parabolic arch is loaded as shown in figure. calculate bending moment at 'D'. **(10)**



OR

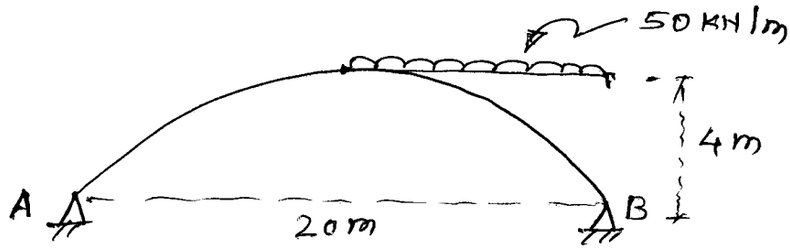
Q.4 A three hinged parabolic arch is loaded as shown in figure. Calculate normal trust and radial shear at D. **(10)**



Q.5 A two hinged parabolic arch of span 'ℓ' and rise 'h' is subjected to point load 'W' at center, drive an equation for horizontal thrust. **(10)**

OR

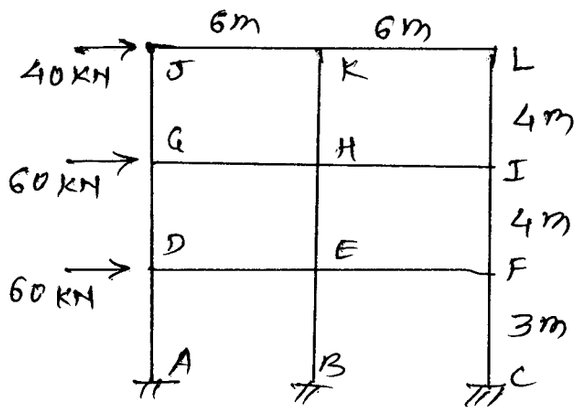
Q.5 Two hinged arch is loaded as shown in figure. Calculate support reactions. **(10)**



Q.6 What is need of approximate methods? Explain various approximate methods along with its suitability. **(10)**

OR

Q.6 Analyse the frame using cantilever method. **(10)**



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