(Please write your Exam Roll No.) Exam Roll No. 05125603414

END TERM EXAMINATION

FOURTH SEMESTER [B.TECH.] MAY-JUNE 2016

Paper Code: ETCE-204 **Subject: Structural Analysis**

Time: 3 Hours **Maximum Marks: 75**

Note: Attempt any five questions including Q no.1 which is compulsory. Assume any missing data suitably.

Q1 (a) What is middle one third rule? Differentiate between middle third and middle fourth rule in rectangular and circular cross sections. **(5)**

(b) Differentiate between thick and thin cylinder and derive hard stress for spherical shells. **(5)**

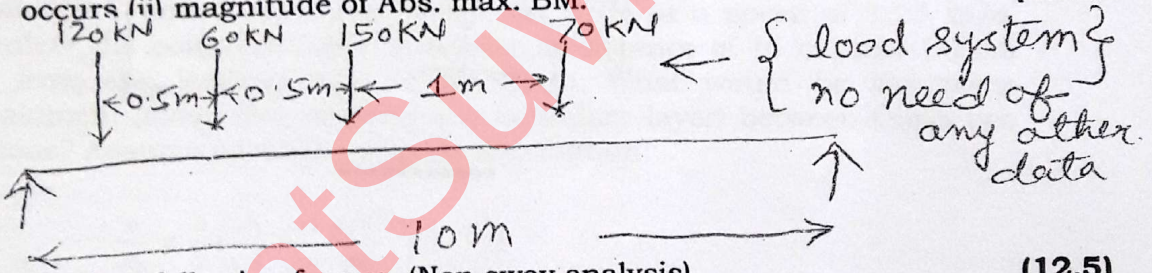
(c) What is Muller Breslau principle? Explain with neat sketch. **(5)**

(d) Differentiate between assumptions of portal and cantilevers method of appropriate analysis of buildings. **(5)**

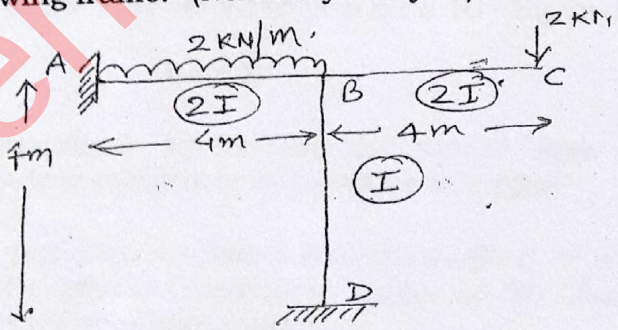
(e) What is Castigliano's second theorem? Explain with suitable examples. **(5)**

Q2 A masonry dam 8m high, 1.5m wide at top and 5m wide at base retains water upto depth of 7.5m. The water face of dam is vertical. Find maximum and minimum stress intensities at base and specify nature of stress $Y_w = 10KN/m^3$ $Y_{mas} = 22.4\ KN/m_3$ **(12.5)**

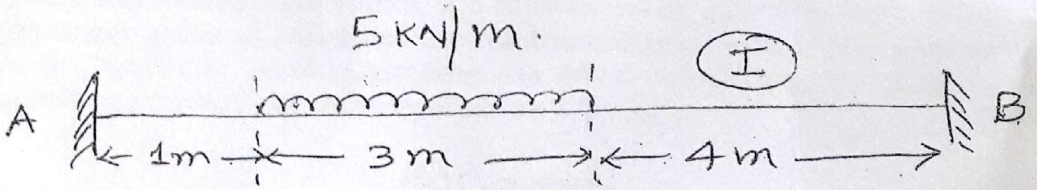
Q3 The load system shown in fig(1) crosses a simply supported system from left to right. Find (i) location of section at which Absolute maximum BM occurs (ii) magnitude of Abs. max. BM. **(12.5)**



Q4 Analyse following frame:- (Non sway analysis) **(12.5)**



Q5 Anlayse following beam:- **(12.5)**



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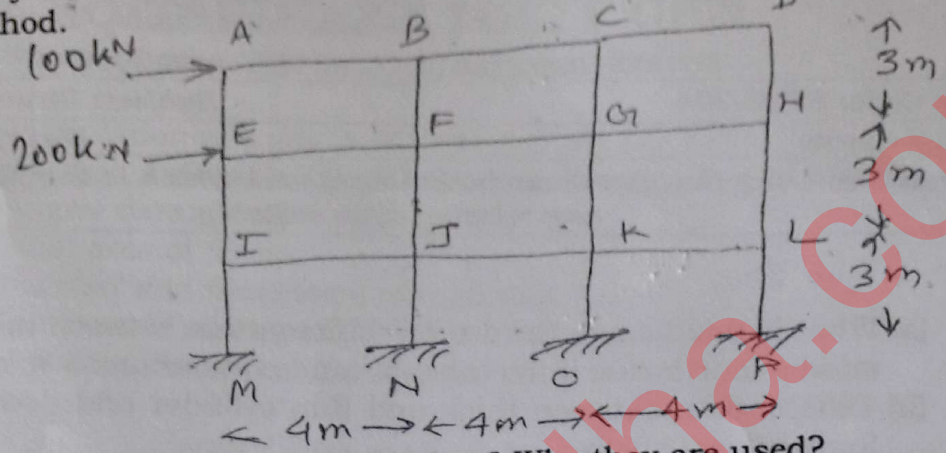
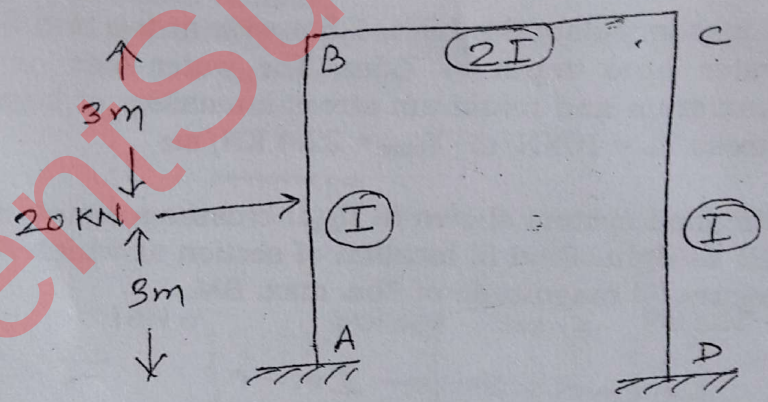
Q6 Analyse the building frame as shown in figure by any approximate method. **(12.5)**



Q7 (a) What are wire wound cylinders? Why they are used? **(5)**

(b) Derive stress formula's for wire wound cylinder if they are subjected to internal fluid pressure 'P'. **(7.5)**

Q8 Using Moment distribution method determine the end moments of frame ABCD. **(12.5)**



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