d) Draw Shear force and bending moment diagram for a cantilever beam loaded as shown in figure 2.0 below.

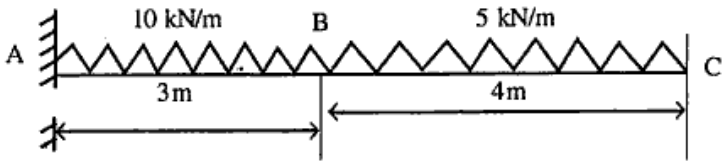

Figure 2.0

OR

Enumerate the expression for a moment of Inertia of Triangular lamina about its base.

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Roll No .....

BE-204

B.E. I & II Semester

Examination, June 2016

Basic Civil Engineering and Engineering Mechanics

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each question are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max. 50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max. 400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

1. a) What do you understand by the term "Workability"? Explain.

b) What is "Frog"? Explain.

c) Define :

i) Curing

ii) R.C.C.

d) What are various properties of Cement? Explain in with salient points.

OR

Define :

i) Plastering and Pointing

ii) Elements of building Construction.

2. a) What do you understand by Plane Table Surveying?

   b) What do you understand by the term "EDM" and "Bearing of a line"?

   c) What is Reciprocal leveling? Also define Reciprocal Leveling.

   d) What are various steps of temporary adjustment of Theodolite? Also explain its uses.

   OR

   The following staff readings were taken with a level which was shifted after 4th, 7th and 10th reading: 2.235, 1.616, 0.960, 2.090, 2.840, 1.622, 1.930, 1.983, 1.045, 2.150, 2.370, 2.654 meters. Assuming the R.L. of starting point as 350.00 meter the readings in the form of level book page and calculate the R.L. of points.

3. a) What is survey station? Where this term use?

   b) What do you understand by GPS?

   c) Enumerates various properties of Contour?

   d) A series of offsets were taken from a chain line to a curved boundary line at intervals of 15 m in the following order: 0.00, 2.60, 3.85, 3.98, 4.12, 4.95, 5.80 meter. Compute the area between the chain line and the curved boundary the end offset by : (i) Simpson's rule (ii) Trapezoidal rule.

   OR

   Define and describe remote sensing and its various applications in civil engineering.

4. a) Define free body diagram.

   b) What do you understand by Coplanar and Concurrent forces?

   c) What are various limitations of method of joint and method of section?

   d) State and prove Lame's Theorem of three forces.

   OR

   Analyses the truss shown below figure 1.0. All the members are of equal length of 4 m.

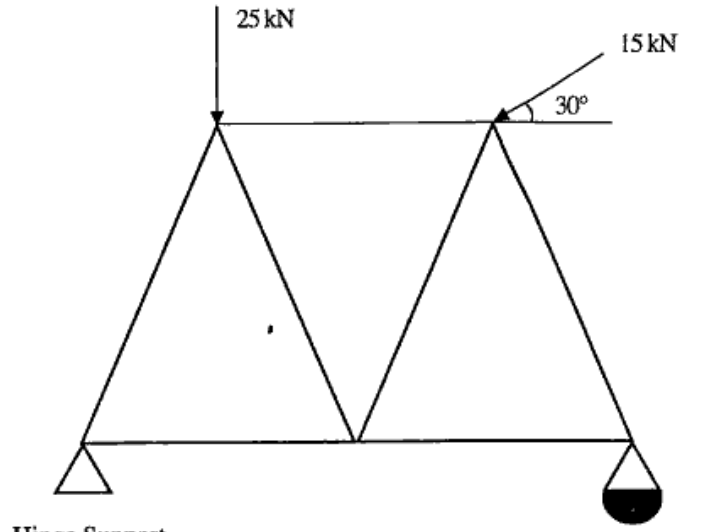

Figure 1.0

5. a) What is Shear force and bending moment?

   b) Define Radius of Gyration and its uses.

   c) Enumerate the expression for perpendicular axes theorem.