(DCE 316)

B.Tech. DEGREE EXAMINATION, MAY - 2015

(Examination at the end of Third Year)

CIVIL ENGINEERING

Paper - VI : Geo-Technical Engineering - I

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

Answer question No.1 compulsory ***(15)***

Answer one question from each unit ***(4 × 15 = 60)***

1) a) Write about

i) Gravel

ii) Silt

b) What are the various types of soils found in India?

c) Define specific gravity of soils.

d) Draw the three phase diagram.

e) State various Index Properties of Soil?

f) Define Reynolds number.

g) Write two examples for cohesive and non cohesive soils.

h) What is secondary consolidation?

i) What is sensitivity?

j) Define stream function.

k) Write the various systems of classification of soils.

l) Write the relationship between plastic limit and liquid limit.

m) State Terzaghi's theory of consolidation.

n) What are the different laboratory tests for shear strength.

o) State Mohr – coloumb's theory?

UNIT - I

2) a) Define soil? Write the scope of Geotechnical Engineering. **(7)**

b) Explain the laboratory procedure for determination of liquid limit of a soil sample by Cassagrande's method. **(8)**

OR

3) a) Explain sand replacement method for determining field density? **(8)**

b) Establish a relation between void ratio, degree of saturation, specific gravity and moisture content. **(7)**

UNIT - II

4) a) Write the structural classification of soils with neat sketches. **(7)**

b) How do you determine effective stress in a soil mass under different loading conditions. **(8)**

OR

5) a) Explain the procedure for determining coefficient of permeability with variable head method? **(8)**

b) State Darcys law? Explain the validity of Darcy's law by Reynolds number. **(7)**

UNIT – III

6) a) What is a flow net? What are the various characteristics of flow net? **(7)**

b) What is compaction control? How do we implement compaction control in field. **(8)**

OR

7) a) What are the factors affecting compaction? Explain in detail about modified procton test. **(8)**

b) Write short notes on Laplace equations. **(7)**

UNIT – IV

8) a) Explain Terzaghis spring model analogy of soils. **(7)**

b) Describe the method of conducting direct shear test in the laboratory. **(8)**

OR

9) a) Explain about triaxial compression test, carried out in the laboratory. **(8)**

b) Write about field implications of consolidation of soils. **(7)**

❄❄❄

(DCE 321)

B.Tech. DEGREE EXAMINATION, MAY - 2015

(Examination at the end of Third Year)

CIVIL ENGINEERING

Paper - I : Structural Analysis - II

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

Answer question No. 1 compulsory ***(15)***

Answer one question from each unit ***(4 × 15 = 60)***

1) a) Write the principles of slope deflection method.

b) Define Sway.

c) What is Relative stiffness?

d) Write any two differences between sway & non sway.

e) State the assumptions of moment distribution method.

f) Define carry over moment & carry over factor.

g) Write an advantage of using Kanis method than other methods.

h) What is the effect of change in stress due to change in temperature in suspension bridge?

i) Write the necessity of SFD while solving problems of slope deflection equations.

j) Write an expression for FEM when the beam is sinking.

k) Define arch? Write the types of arches.

l) What is a multi storeyed frame?

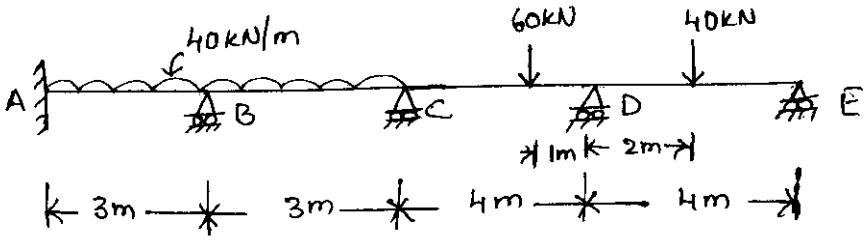
m) Write 2 differences between two hinged and three hinged arches.

n) What are anchor cables?

o) Define Gravity loads.

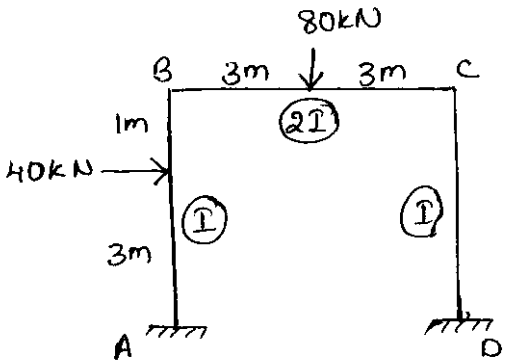
UNIT – I

2) Analyse the continuous beam by slope deflection method and draw BMD & SFD. Consider moment of Inertia to be same throughout.



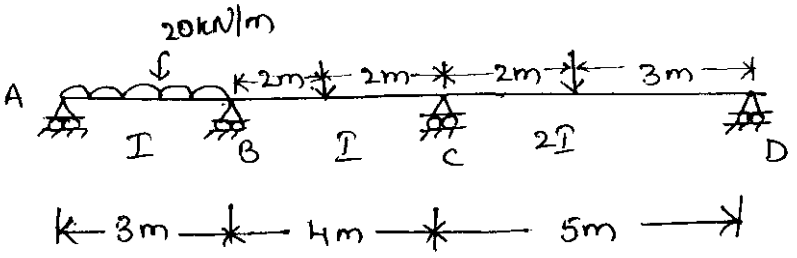
OR

3) Analyse the Portal frame by slope deflection method and draw the BMD.



UNIT – II

4) A continuous beam ABCD is loaded as shown Analyse the beam by Moment Distribution method.



OR

5) Analyse the frame by Moment Distribution method.