B.Tech / Integrated (MBA/M.Tech) 1st Semester Examination
June – July 2013
ELEMENTS OF CIVIL ENGINEERING
Subject Code: CEL-101

Time Allowed: 03 hours.  Maximum Marks: 100

Before answering the question paper the candidate should ensure that they have been supplied the correct question paper. Complaints in this regard, if any, shall not be entertained after the examination.

Note: Attempt any five questions and all questions carry equal marks.

SECTION A

1. a) What do Civil Engineers do? (4)
   
   b) What is the difference between a Civil Engineer and an Architect? (4)
   
   c) Write a short Note on: Civil Engineering History (6)
   
   d) Name Basic components of any Building Structure. (6)

2. (a) Define Plane tabling? Explain the principles of Surveying. (5)
   
   (b) Explain the method of Plane Table Survey? (7)
   
   (c) What is orientation? Explain the method of orientation. (8)

3. a) How, presence of termites can be detected on a building site? (4)
   
   b) A Residential Plot of area 600 m\(^2\) in a City Area with permissible F. S. I. of 2 is to be constructed.
      
      i) What is the maximum built-up area which can be put up on the Plot? (3)
      
      ii) How this built-up area can be consumed? (3)
   
   c) Explain Composite Structure with the help of a neat Sketch (5+5)

SECTION B

4. (a) What is Structure? Explain various types of Structure in details? (10)
   
   (b) What is Termites? Explain various types of Termites and effect on the buildings? (10)

5. Explain the following (5 x 4 = 20)
   
   (a) Stress strain curve of mild steel with neat sketch
   
   (b) Difference between Isotropic material and anisotropic materials with practical example.
   
   (c) Define Ductility, Brittleness, young’s modulus and shear modulus?

6. (a) What is Beam? Explain various types of beam according to their end condition? (10)
   
   (b) Draw the Shear Force and Bending Moment diagram of the simply supported beam, length of 6 meter carrying a full span UDL of 3.5 KN/M. (10)