M.Tech 1st Semester Examination
Jan. 2014
Subject – Advanced Structural Analysis
Subject Code – CEL-501

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: Question No. 1 is Compulsory and attempt two questions from each section. All questions carry equal marks.

Q. No. 1 Determine slope and deflection at point A, B and C in the following figures:

Q. 1 Define stiffness matrix.
Q. 2 Define flexibility matrix.
Q. 3 Determine stiffness of a member when transverse displacement at one end of prismatic member without any rotation at the same end of the member in different cases.
   i) when both ends of the member hinged.
   ii) when one end is hinged and other end is fixed.
Q. 4 Develop the flexibility matrix for a simply supported beam consisting a point load at its center.
Q. 5 Draw shear force diagram and bending moment diagram in the following frame by using stiffness matrix method.

Q. 6 Draw shear force diagram and bending moment diagram in the following frame by using stiffness matrix method.