

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-V EXAMINATION – WINTER 2015

Subject Code: 153402**Date:17/12/2015****Subject Name: Computer Aided Design and Analysis****Time: 10:30am to 1:00pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Discuss with neat sketch, why B spline curves are widely used. **07**
(b) Compare CSG and B-Rep with suitable example. **07**
- Q.2** (a) Explain, in geometric transformation, reflection is the process of getting mirror image of original shape. **07**
(b) How rotation matrix is useful to view the objects from different angles? **07**
- OR**
- (b) Define geometric transformation, state its purpose and also explain important matrices properties of concatenated transformation. **07**
- Q.3** (a) Explain role of data exchange standard in computer aided design. **07**
(b) Explain application of solid modeling in industries. **07**
- OR**
- Q.3** (a) Explain Lofted Surface and show how it differs with edge surface. **07**
(b) Explain effect of Mesh size on object visualization with suitable sketches **07**
- Q.4** (a) Explain Pre processing in FEA and show how Post processing is differ from it. **07**
(b) Show selection of 1D element and its application in the Truss **07**
- OR**
- Q.4** (a) Explain Shape function in natural co ordinate system **07**
(b) How principle 'Divide and Rule' is helpful to understand discretization in FEA? **07**
- Q.5** (a) How FEA is advantageous in current manufacturing scenario? **07**
(b) Enlist steps to describe FEA of stepped bar considering loading is axial. **07**
- OR**
- Q.5** (a) Explain triangular element and internal compatibility for structural member **07**
(b) What is meshing in FEA? **07**
