

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V • EXAMINATION – WINTER • 2014****Subject Code: 153402****Date: 28-11-2014****Subject Name: Computer Aided Design and Analysis****Time: 10.30 am - 01.00 pm****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) Explain the types of geometric modeling techniques. **07**
(b) Write in detail about kinematic analysis and its applications. **07**
- Q.2** (a) Discuss the product design life cycle. **07**
(b) Explain the difference between cubic spline and Bezier curve. **07**
- OR**
- (b) Write about transformations. **07**
- Q.3** (a) List the advantages of computer aided design. **07**
(b) What is meant by Interactive Graphics? Explain its various elements. **07**
- OR**
- Q.3** (a) What is the role of primitives and Boolean operations in CSG? Explain with suitable examples. **07**
(b) What are the types of surfaces used in CAD system? **07**
- Q.4** (a) Explain design by features. **07**
(b) Write the general procedure for FEA problems. **07**
- OR**
- Q.4** (a) Discuss about different types of elements used in FEM. **07**
(b) Explain various solution techniques in FEM. **07**
- Q.5** (a) Discuss the advantages and disadvantages of finite element method over conventional methods. **07**
(b) How to minimize the errors in FEA? Explain. **07**
- OR**
- Q.5** (a) What are shape functions? Discuss their properties. **07**
(b) Discuss how finite element method is evolved in the engineering field. **07**
