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H-61

B. Tech. EXAMINATION, Dec. 2018

(Eighth Semester)

(B. Scheme) (Re-appear Only)

(ME)

ME402B

COMPUTER AIDED DESIGN

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

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit.

Unit IV

7. (a) Explain the different types of analysis. **7**

(b) Derive an expression of stiffness matrix for one-dimensional truss element. **8**

8. Explain in detail with a suitable example the procedure for finite element analysis. **15**

Unit I

1. (a) What is Computer Integrated manufacturing (CIM). Discuss its scope and benefits. **7**

(b) What does parametric equation mean ? List its advantages as compared to implicit and explicit equations. Derive the parametric equation of a line with starting point as (x_1, y_1) and end point as (x_2, y_2). **8**

2. (a) Describe each transformation with an example : **12**

(i) Translation

(ii) Reflection

(iii) Scaling

(iv) Rotation.

(b) What is Concatenation ? **3**

Unit II

3. What is a B Spline Curve ? List its properties. Also write the parametric equation for B spline curve. **15**

4. (a) Differentiate between Bezier surface and B-spline surface with a neat sketch. **10**

(b) What is a blending function ? **5**

Unit III

5. Explain the basic elements of a boundary represented solid model scheme. Develop an algorithm for planar intersection polygon of two solids using B-rep scheme. **15**

6. Explain the basic elements of sweep representation. Discuss the main building operations of sweep representation schemes with examples. **15**