



(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 100851

Roll No.

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B. Tech.

(SEM. VIII) THEORY EXAMINATION, 2014-15
COMPUTER AIDED DESIGN

Time : 3 Hours]

[Total Marks : 100

1 Attempt **any two** of the following? **2×10=20**

- (a) What are the different types of output hardware devices used for CAD program? Explain any three in detail, with neat sketch for the necessary one.
- (b) Write down the advantages of computer aided design over conventional design.
- (c) Explain the CAD software evaluation criteria.

2 Attempt **any two** of the following : **2×10=20**

- (a) Explain in detail the principles of software design.
- (b) Explain the concept of modular programming. Write down the benefits of modular programming.
- (c) Define debugging. Explain the different types of debugging approaches.

3 Attempt **any two** of the following : **2×10=20**

- (a) What are the different application of CAD in civil, architecture and structural engineering?
- (b) Explain the concept of finite element analysis. Classify various problems in FEA.
- (c) Explain the following terms related to FEM or FEA :
 - (1) Shape function
 - (2) Degrees of freedom
 - (3) Stiffness matrix
 - (4) Boundary conditions.

4 Attempt **any two** of the following : **2×10=20**

- (a) Explain the computer visualization in geotechnics.
- (b) Explain the different types of structural design and analysis software packages?
- (c) Name and explain in brief software packages in environmental engineering.

5 Attempt **any two** of the following : **2x10=20**

- (a) Explain artificial intelligence.
- (b) What are the different applications of expert systems? Explain their benefits to end user.
- (c) What are the advantages and limitations of neural networks?