B. Tech.
(SEM. VIII) EXAMINATION, 2006-07
COMPUTER AIDED DESIGN

Time : 3 Hours] [Total Marks : 100

Note : Attempt all questions.

1. Attempt any two parts of the following: 10×2=20

(a) Describe the typical requirement of different types of memory of modern CAD workstation. How does and why the “CACHE” memory affect the performance of CAD workstation?

(b) For a typical highway bridge design project, what could be different advantages of CAD software in comparison to the conventional design method?

(c) Why in typical structural Civil Engineering CAD software, a good printing and estimating and costing modules must be available? What features must be available in such modules?
2. Attempt any two parts of the following: \(10 \times 2 = 20\)

(a) How is the concept of modular programming different from the procedural programming? Name the different languages that support each type of programming paradigm.

(b) What kind of different debugging tools are available and how could they be used to debug typical CAD software?

(c) List out and describe the functionality of different modules in typical commercial complex CAD software.

3. Attempt any two parts of the following: \(10 \times 2 = 20\)

(a) Describe any one Civil Engineering design problem requiring iterative design process, which could be solved with the help of CAD software.

(b) Explain in detail and with an example, how the BIS codes or any other codes are implemented in any Civil Engineering Design Software.

(c) Explain any one Civil Engineering Design software requiring database management system. How does the DBMS help in such design software?
4. Attempt any two parts of the following: \( 10 \times 2 = 20 \)

(a) Describe any one of the modern software for the design of framed structures. What are the typical features of such software?

(b) Explain, how can computer aided software could be utilized for environmental impact analysis of large civil engineering projects.

(c) Draw and explain the flow chart for the design of column foundation.

5. Attempt any two parts of the following: \( 10 \times 2 = 20 \)

(a) What are the different Civil Engineering fields in which artificial neural networks could be utilized for the analysis of the problem? Explain any one such application in detail.

(b) Write short notes on knowledge based expert system.

(c) Describe, how an expert system can help in site selection of large dam projects.