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Number of Printed Pages—3 **IT–502 / CS–701**

B. TECH.

FIFTH SEMESTER EXAMINATION, 2002-2003

SOFTWARE ENGINEERING

Time : Three Hours *Total Marks : 100*

Note : Attempt ALL questions.

1. Attempt any FOUR of the following :— $(5 \times 4 = 20)$

(*a*) What do you understand by the term Software Engineering ?

(*b*) Why has software become so much important in modern days desk top computing ?

(*c*) Explain, in brief, the evolution of computer software in last 50 years.

(*d*) A set of software related problems has persisted throughout the evolution and many fear that these problems will intensify — explain any two of the problems in detail.

(*e*) "Software is developed or engineered, it is not manufactured in classical sense." Explain.

(*f*) Name and explain three applications of software.

2. Attempt any FOUR of the following :— $(5 \times 4 = 20)$

(*a*) Explain, in brief, Software development life-cycle.

(*b*) What is Requirement Analysis ?

(*c*) Explain Software Process Model in brief.

(*d*) Describe, with a suitable diagram, the Waterfall Model or Prototype Model.

(*e*) Explain, with examples, Top Down and Bottom Up approach in Software design.

(*f*) Provide three examples of fourth generation techniques.

3. Attempt any TWO of the following :— (10 × 2 = 20)

(*a*) Explain the advantages of Structured Programming in detail.

(*b*) What are the Testing Objectives and Testing Principles in Software Design ?

(*c*) What are Top Down and Bottom Up Integration testings ? Explain with examples.

4. Attempt any TWO of the following :— (10 × 2 = 20)

(*a*) Discuss, in detail, the basic principles in Project Scheduling.

(*b*) How do OOD and structured design differ ? What aspects of these two design methods are the same ?

(*c*) Describe a video game and apply the OOD approach to represent its design.

5. Attempt any TWO of the following :— $(10 \times 2 = 20)$

(*a*) What is CASE ? Explain three most used CASE tools.

(*b*) Are there situations in which dynamic testing tools are the "only to go" ? If so, what are they ? Describe, what is meant by Data Tool Integration in your own words.

(*c*) What are the reliability issues in regard to quality assurance of a design ? Explain Reliability Metrics.