

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

PAPER ID : 0114

Roll No.

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### B. Tech.

(SEM. IV) THEORY EXAMINATION 2010-11

### SOFTWARE ENGINEERING

Time : 3 Hours

Total Marks : 100

Note : (i) Attempt all questions.

(ii) All questions carry equal marks.

(iii) Be precise in your answer.

(iv) No second Answer book will be provided.

1. Attempt any **four** parts of the following : (4×5=20)
  - (a) Define software engineering. What are the key challenges facing software engineering ?
  - (b) Describe various phases of software development life cycle.
  - (c) Why there is software crisis in the industry ? Discuss.
  - (d) What are the various software quality attributes ? Discuss any two of them.
  - (e) Write short note on Spiral Model. Also discuss its merits and demerits of this model.
  - (f) Compare evolutionary development model and iterative enhancement model.

2. Attempt any **two** parts of the following : (10×2=20)
- (a) Discuss the general format of a SRS document and discuss its main components in detail.
  - (b) Write short note on the following with example :
    - (i) Decision Table
    - (ii) Feasibility Study.
  - (c) (i) Why data flow diagram is used ? Make a data flow diagram for issue and return of books from the library.
  - (ii) What do you mean by formal technical review ? What is its significance in software development ?
3. Attempt any **two** parts of the following : (10×2=20)
- (a) Write the characteristics of a good design. How the coupling and cohesion measures are used to find out strength of design ? Explain
  - (b) (i) Differentiate between function oriented design and object oriented design.
  - (ii) Describe layered software design. What are the advantages and disadvantages of layered software design.
  - (c) (i) Describe various Halstead software science measures for size, development effort, and development cost of software product.
  - (ii) Write short note on the importance of software architecture.

4. Attempt any **two** parts of the following : (10×2=20)
- (a) (i) Differentiate between error and failure. Which of the two is detected by testing ? Justify your answer.
  - (ii) What is meant by a code walk through ? Explain with example.
  - (b) Write short note on the following with examples :
    - (i) Unit Testing.
    - (ii) Acceptance testing.
  - (c) (i) What do you understand by the clean room strategy ? Discuss.
  - (ii) "System testing can be considered as a pure black-box test". Justify your answer.
5. Attempt any **two** parts of the following : (10×2=20)
- (a) (i) What are the different types of maintenance that a software product might need ? Discuss.
  - (ii) What is risk ? How to identify risk ?
  - (b) (i) Describe the COCOMO model. What is its significance ?
  - (ii) Write short note on reverse engineering.
  - (c) (i) What are the main advantages of the CASE tools ? Discuss.
  - (ii) Discuss change control process with suitable example.