

5. Answer any two parts :  $2 \times 10 = 20$

- (a) What are the different categories of software development projects according to the COCOMO estimation model? Give examples of software product development projects belonging to each of these categories.
- (b) What are the important types of risks that a project might suffer from? How would you identify the risks that a project may be susceptible to during the project planning stage?
- (c) Define the following :
  - (i) Software configuration Management.
  - (ii) An overview of CASE tools.



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

PAPER ID : 1070

Roll No.

B. Tech.

(SEM. IV) EXAMINATION, 2008-09

SOFTWARE ENGINEERING

Time : 3 Hours]

[Total Marks : 100

- Note :
- (1) Attempt all questions.
  - (2) Each question carries equal marks.

1 Answer any four parts :  $4 \times 5 = 20$

- (a) Define software engineering. Discuss its main objectives.
- (b) Differentiate between a program and a software product.
- (c) Define a software process with suitable example.
- (d) Explain why a software system that is used in a real-world environment must change or become progressively less useful.
- (e) Define the following :
  - (i) Prototyping models
  - (ii) Evolutionary model.



- (f) What do you mean by feasibility study? Explain various important activities that are carried out during the feasibility study phase.

2 Answer any **four** parts of the following : **4×5=20**

- (a) Explain with suitable examples the different types of requirement problems that should be identified and resolved during the requirements analysis activity.
- (b) Describe three types of non-functional requirement which may be placed on a system. Give examples of each of these types of requirement.
- (c) Why do traceability matrices become difficult to manage when there are many system requirements? Explain with suitable example.
- (d) Who are the different categories of uses of the SRS document? What are their expectations from the SRS document?
- (e) Describe ISO 9000 quality models.
- (f) Define the following :
- Verification and Validation
  - IEEE standards for SRS.



3 Answer any **two** parts : **2×10=20**

- (a) Discuss their advantages and disadvantages as far as distributability is concerned of the data-flow model and the object model, with an example.
- (b) Define the following with example :
- Function oriented design.
  - Top-down and Bottom-up design.
- (c) Describe the following software measurement and metrics.
- Function Point (FP) based measures.
  - Cyclomatic Complexity measures.

4 Answer any **two** parts : **2×10=20**

- (a) What should be the criteria for designing test cases? Derive a set of test cases for the following :
- A sort routine which sorts arrays of integers.
- (b) What are drivers and stub modules in the context of integration and unit testing of a software product? Why are stubs and driver modules required?
- (c) (i) What do you understand by the clean-room strategy? What are its advantages?
- (ii) Define stress testing? Why is stress testing applicable to only certain types of systems?

