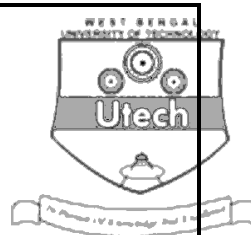


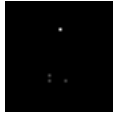
[illegible]

[Full Marks : 70

36005 (01/07)



DO NOT WRITE ON THIS PAGE



CS / M.Tech (MSS) / SEM-2 / MSS-202 / 09
SOFTWARE PROJECT & QUALITY MANAGEMENT
SEMESTER - 2



Time : 2 Hours]

[Full Marks : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

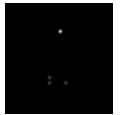
Answer any *five* questions, taking at least *one* from each Group. 5 × 14 = 70

(All the answers should be brief and to the point. State your assumptions, if any clearly)

GROUP – A

1. a) What are the basic principles of software project scheduling ?
 b) Establish the relationship between human resource and effort using Putnam's software equation.
 c) What do you mean by 'Milestone' in a software project schedule ? How can you identify a 'Milestone' ? 5 + 5 + 4
2. a) Why is software sizing required ?
 b) How do you differentiate external output and external inquiry during function point analysis of a project ?
 c) Suppose you have to perform FP analysis of user interface module of a software product, which is used as a domestic safety alarm. Go through the data flow diagram of the module given below and identify all EIs, EOs, EQs, ILFs and EIFs of that module.

Dia.



If unadjusted function point value for this module is 50, UAF and it is a moderately complex product with $\sum F_i$ is 46, calculate the Adjusted Function Point (AFP) value for this product.

3 + 3 + 8



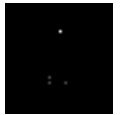
3. a) How do you define 'Verification and Validation' in software testing ? When Smoke Testing is required ?
- b) Define stub and driver. Compare top-down versus bottom-up integration approaches.
- c) Determine the set of linearly independent paths in the flow graph given below. Generate the graph matrix and calculate the cyclomatic complexity of the flow graph. Explain the significance of cyclomatic complexity in software testing.

4 + 4 + 6

Dia.

4. a) What do you mean by 'Agility' ?
- b) Discuss the characteristics of Agile Software Process.
- c) Briefly state Feature Driven Development (FDD) framework. Using FDD feature template, define a set of features for 'Making a product sale' in e-commerce application.

2 + 4 + 4 + 4



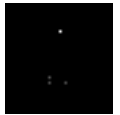
5. a) Define Critical Path Analysis. Why is it required for software project management ?
- b) Compare the different techniques used for critical path analysis.
- c) Find out the critical path of the network diagram of a software project given below. Explain the steps of the algorithm you have used. 2 + 2 + 5 + 5



Dia.

GROUP – B

6. a) Classify critical systems based on the results of failure.
- b) Give an example of a critical system where failure would not directly cost lives but may cause huge loss in the business process.
- c) What do you mean by dependability of a system ? Name four major dimensions for dependability of a software system.
- d) How do you compare usefulness versus dependability of a system ?
- e) “Errors in a system do not necessarily lead to system failures” — Give your opinion on the correctness of the statement and justify the same. 2 + 2 + 3 + 3 + 4
7. a) What is software quality management ?



- b) "Quality management should be separate from project management to ensure independence" — Give your opinion on the correctness of the statement and justify the same.
- c) Define and differentiate between quality assurance and quality planning. What is quality control ?
- d) Why are measurement metrics needed for effective quality management ? Name at least three possible measurement metrics for different software qualities.
- e) What are the different levels of CMM ? Explain the role for each of these levels in quality management. 1 + 4 + 4 + 5
8. a) What is real time system ? Differentiate between soft and hard real time systems.
- b) "Object Oriented Paradigm may not be highly suitable for designing real time systems" — Give your opinion on the correctness of the statement and justify the same.
- c) What are the major components of a real time operating system ? Explain in brief the role of the each of these components. 3 + 4 + (2 + 5)

END