



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/M.Sc.(INFO.SC)/SEM-2/MI-204/2012**

**2012**

**SOFTWARE ENGINEERING**

Time Allotted : 3 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.*

**GROUP - A**

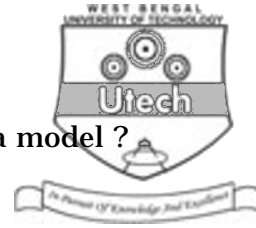
**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for the following :

10 × 1 = 10

- i) PERT means
  - a) Project Evaluation and Review Technique
  - b) People Evaluation and Review Technique
  - c) Project Estimation and Review Technique
  - d) Product Evaluation and Review Technique.
- ii) Black box testing is designed based on
  - a) Equivalence & Class Partitioning
  - b) Boundary Value Analysis
  - c) Both of these
  - d) None of these.

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iii) Which SDLC model is termed as Meta model ?

- a) Prototype
- b) Spiral
- c) Waterfall
- d) Evolutionary.

iv) SRS document contains

- a) Project Development discussions
- b) Test cases
- c) Risk involved in the project
- d) User requirements in an informal form.

v) Estimation of development effort for organic is

- a)  $2.4 (KLOC)^{1.05} pm$
- b)  $3.0 (KLOC)^{1.12} pm$
- c)  $3.6 (KLOC)^{1.20} pm$
- d) none of these.



- vi) COCOMO is a/an
- a) empirical estimation technique
  - b) heuristic technique
  - c) both (a) and (b)
  - d) none of these.
- vii) To allocate resource to activities we use
- a) Gantt chart
  - b) PERT chart
  - c) CPM
  - d) none of these.
- viii) Which one is the phase for risk management ?
- a) Risk identification
  - b) Risk monitoring
  - c) Risk analysis
  - d) All of these.

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- ix) Type(s) of project plants is/are
- a) configuration management plan
  - b) testing plan
  - c) staff development plan
  - d) all of these.
- x) Which one is not a level of CMM ?
- a) Initial
  - b) Define
  - c) Managed
  - d) none of these.

**GROUP - B**

**( Short Answer Type Questions )**

Answer any *three* of the following.  $3 \times 5 = 15$

2. Explain briefly different types of feasibility study.
3. "A module having high cohesion and low coupling is said to be functionally independent of other modules." Explain.
4. What are the several tools and techniques used for describing the system design of the system ?



5. What are validation & verification ?

6. Briefly explain Test case specification.

**GROUP - C**

**( Long Answer Type Questions )**

Answer any *three* of the following.  $3 \times 15 = 45$

7. a) What is the utility of a DFD in system design ?  
b) Draw a DFD ( Level 0 & Level 1 ) to show the admission process in student management system.  
c) How DFD is different from ERD ?  $3 + 3 + 6 + 3$

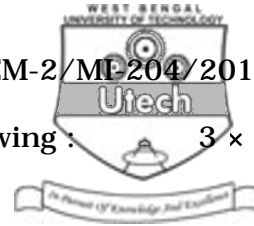
8. a) Write down the advantages of decision tree under decision table.  
b) Mention two situations when decision table best works.  
c) A bank has decided to adopt the following policy on deposits :

On deposits of Rs. 5,000 and above and for three years or above the interest is 10%. On the same deposit for a period less than 3 years it is 8%. On deposits below Rs. 5,000 the interest is 6% regardless of the period of deposit.

Develop a decision tree and decision table for the above problem. Also express the above policy using structure English.  $2 + 2 + ( 4 + 4 + 3 )$



9. a) What are the different levels of testing ? Describe each briefly.
- b) Assume that the size of an organic software product has been estimated to be 50,000 lines of source code. Assume that the average salary of each software engineer is Rs. 18,000 per month. Determine the effort required to develop the software product and nominal development time.
- c) What is COCOMO model ? Write the formulae for development effort and development time estimation with respect to basic COCOMO model.  $6 + 4 + 1 + 4$
10. a) What are the software reliability matrices ?
- b) State the advantages and disadvantages of LOC.
- c) Assume that the size of an organic software product has been estimated to be 50,000 lines of source code. Assume that the average salary of each software engineer is Rs. 18,000 per month. Determine the effort required to develop the software product and nominal development time.
- d) Briefly describe SCM.  $4 + 3 + 4 + 4$



11. Write short notes on any *three* of the following : 3 × 5

- a) Data Dictionary & Structure English
- b) CASE Tool
- c) COCOMO
- d) Spiral Model
- e) FTR.

