



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/B.TECH (ECE)/SEP. SUPPLE/SEM-8/EC-803A/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) Which is not a type of software maintenance ?

- |              |                |
|--------------|----------------|
| a) Primitive | b) Corrective  |
| c) Adaptive  | d) Perfective. |

ii) Which one is not a Risk Management Activity ?

- |                    |                   |
|--------------------|-------------------|
| a) Risk Assessment | b) Risk Control   |
| c) Risk Generation | d) None of these. |

iii) Which one is a quality attribute ?

- |                 |                  |
|-----------------|------------------|
| a) Availability | b) Reliability   |
| c) Security     | d) All of these. |



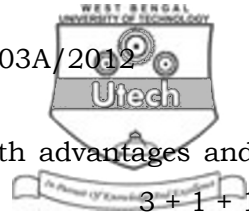
- iv) If user participation is available, which model is to be chosen ?
- a) Waterfall Model                      b) Spiral Model
- c) Prototype Model                      d) RAD Model.
- v) Acceptance Testing is done by
- a) Developers                              b) Customers
- c) Testers                                      d) all of them.
- vi) Critical path method is a task of
- a) Project Planning
- b) Project Scheduling
- c) Risk management
- d) Configuration management.
- vii) To achieve a good design, modules should have
- a) Weak cohesion Low coupling
- b) Weak cohesion High coupling
- c) Strong cohesion Low coupling
- d) Strong cohesion High coupling.
- viii) Alpha testing is done by
- a) the development team
- b) a friendly set of customers
- c) the customer himself
- d) none of them.

- GROUP – B**

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

- Assume that the size of an organic type software product has been estimated to be 48000 lines of source codes. Assume that the average salary of software engineers is Rs. 18,000 per month. Determine the effort required to develop the software product; total cost and the nominal develop time.

[ Turn over



6. Explain the phases of Waterfall Model with advantages and disadvantages.

3 + 1 + 1

### GROUP – C

#### ( Long Answer Type Questions )

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

7. a) Make a comparative study of all major SDLC models. Among them which one is known as 'meta model' and why ?  $5 + 1 + 2$
- b) A Library Membership Software (LMS) should support the following three options :
- New member.
  - Renewal.
  - Cancel membership.

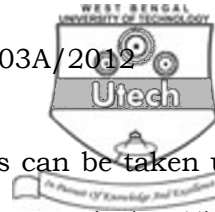
When the new member option is selected, the software should ask for the member's name, address and phone number. If proper information is entered, the software should create a membership record for the new member with membership id and print a bill for the annual membership charge and the security deposit payable. If the renewal option is chosen, the LMS should ask for the membership id.



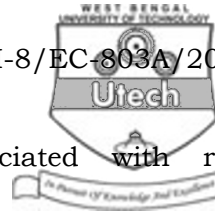
If the membership id is valid, then the membership expiry date in the membership record should be updated and the annual membership charge payable by the member should be printed. If the membership id is not valid, an error message will be displayed. If the cancel membership option is selected, the system should ask for the membership id again. If the membership id is valid, then the membership cancellation process can be executed and a cheque for the balance amount due to the member is printed and membership record will be deleted.

Draw Decision Tree and also implement Decision Table for this system. 7

8. a) What are the characteristics of Good SPMP document ? 4
- b) Explain how function point metric overcomes the problems of LOC metric. 4
- c) Explain unit testing, system testing and acceptance testing. 3
- d) Explain different types of 'performance testing'. 4
9. a) For a semi-detached software product, the SRS version 1 is scheduled to get created in 15 days. Once



- done, 3 parallel types of design works can be taken up, each taking 25, 30 & 35 days respectively. Their corresponding implementation works will take 45, 40 & 30 days. Find out the values of all 5 time parameters (ES, EF, LS, LF, ST) of each activity if system testing is supposed to take 70 days and help file creation is scheduled to get completed in 20 days. 7
- b) What is software crisis ? 3
- c) What is software reverse engineering ? Explain with example. 5
10. a) Define the utilities of PERT chart with an example. 4
- b) Differentiate between 'code walkthrough' and 'code inspection'. 3
- c) A software product's development cost is Rs. 6 lacs and total size is 1 lac LOC. During maintenance, to improve the product, 50% of total code base is replaced by new code in a single year. Calculate the software product's annual maintenance cost. 5
- d) Explain 'equivalence class partitioning' with an example. 3



11. a) Explain the 3 parameters associated with risk management. 6
- b) Why is intermediate COCOMO expected to give more accurate estimates than basic COCOMO ? 2
- c) What is configuration management ? Explain with example. 3
- d) Draw the context diagram and level 1 DFD for Tic-Tac-Toe computer game. 4
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