CS/B.TECH (ECE-NEW)/SEM-8/EC-803A/09



1. .....
Signature of Invigilator

2. .....
Signature of the Officer-in-Charge

Reg. No.

Roll No. of the Candidate

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CS/B.TECH (ECE-NEW)/SEM-8/EC-803A/09

ENGINEERING & MANAGEMENT EXAMINATIONS, APRIL – 2009

SOFTWARE ENGINEERING (SEMESTER - 8)

Time : 3 Hours] [Full Marks : 70

INSTRUCTIONS TO THE CANDIDATES :

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
2. a) In **Group – A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question**.
   b) For **Groups – B** & **C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group – B** are Short answer type. Questions of **Group – C** are Long answer type. Write on both sides of the paper.
3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
4. Read the instructions given inside carefully before answering.
5. You should not forget to write the corresponding question numbers while answering.
6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
7. **Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**
8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
9. Rough work, if necessary is to be done in this booklet only and cross it through.

No additional sheets are to be used and no loose paper will be provided

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Marks Obtained

	Group – A										Group – B			Group – C			*Total Marks*	*Examiner's Signature*
Question Number																		
Marks Obtained																		

.....
Head-Examiner/Co-Ordinator/Scrutineer

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GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following : 10 × 1 = 10

i) The most important feature of Spiral model is

a) Quality management b) Maintenance

c) Risk assessment d) None of these. ☐

ii) Product quality is defined as

a) delivering a product with correct requirements

b) delivering a product using correct development procedures

c) delivering a product which is developed iteratively

d) delivering a product using high quality procedures. ☐

iii) Developing a new operating system is a/an

a) organic mode of software project

b) semidetached type of software project

c) embedded type of software project

d) none of these. ☐

iv) A decision table is

a) a way to get an accurate picture of the system

b) a way of representing the information flow

c) a way of representing multiple conditions

d) all of these. ☐

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v) Big Bang integration testing is useful for projects with

a) smaller number of modules b) larger number of modules

c) average number of modules d) none of these. ☐

vi) An important aspect in coding is

a) readability

b) productivity

c) to use as small memory space as possible

d) brevity. ☐

vii) In testing phase the efforts distribution is

a) 10% b) 20%

c) 40% d) 50%. ☐

viii) Modularity

a) is a feature of all programming language

b) helps to make large programs more understandable

c) both (a) and (b)

d) none of these. ☐

ix) Use of recursion

a) enhances logical clarity and reduces code size

b) makes debugging easier

c) reduces execution time

d) makes software bug-free. ☐

x) On an average the programmer months is given by $3{\cdot}6 \times (\text{KDSI})^{1{\cdot}2}$. If so the project requiring 1000 source instructions will require

a) 3·6 PM b) 0·36 PM

c) 0·0036 PM d) 7·23 PM. ☐

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GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. 3 × 5 = 15

2. What are the roles of a Project Manager ? Mention different team structures existent in a software company. 3 + 2

3. Assume that the size of an organic type software product has been estimated to be 32,000 lines of source code. Assume that the average salary of software engineers is Rs. 15,000 per month. Determine the effort required to develop the software product and the nominal development time. 5

4. What do you understand by Data Flow Diagram (DFD) ? Explain briefly with an example. 2 + 3

5. How to document the functional requirements ? Explain briefly. 5

6. What are risk identification, estimation and mitigation ? 5

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following questions. 3 × 15 = 45

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

   a) PERT

   b) Integration Testing

   c) Coupling and Cohesion

   d) Prototyping

   e) Structure Chart.

8. a) What do you mean by Feasibility Analysis ?

   b) Explain the phases of Classical Waterfall Model with advantages and disadvantages. Why is Iterative Waterfall Model used ?

   c) Explain the phases of Spiral Model with advantages and disadvantages.

   d) What is UML ? What is the purpose of UML ? Briefly explain the 'Sequence Diagram'. 2 + 3 + 1 + 4 + 5

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9. a) Explain the concept of COCOMO Model.

b) An organization developing a compiler wants to calculate the cost of the project that includes two employees having a salary structure of Rs. 20,000/month. Calculate the cost.

c) Why is intermediate COCOMO expected to give more accurate estimates than the basic COCOMO ?

d) What is Risk ? Briefly explain the different categories of risks.

e) Describe the characteristics of a good SRS document. 4 + 3 + 2 + 3 + 3

10. a) What do you mean by Code Walk-Through and Code Inspection ?

b) What is unit testing ? What are errors found during unit testing ?

c) Discuss the roles of stubs and drivers in unit testing of a software product.

d) Explain Black-box and White-box Testing.

e) Software Quality and Software Reliability. 2 + 3 + 2 + 3 + 5

11. a) What are the main differences between stuctured and OO programming ?

b) What is a good software design ?

c) What is DFD ? What are the differencs between the logical and physical DFD ?

d) Describe the types of software maintenance.

e) Explain the following broad category of software threats :

i) Trap doors

ii) Logic Bombs

iii) Trojan Horses. 2 + 3 + 3 + 2 + 5

END

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