2C8124

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MCA II - Sem. (Main / Back) Exam., - 2023
MCA – 204 Software Engineering & UML

Time: 3 Hours

Maximum Marks: 70

Instructions to Candidates:

Attempt all ten questions from Part A. All five questions from Part B and three questions out of five questions from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL   2. NIL

PART – A

[10×2=20]

(Answer should be given up to 25 words only)

All questions are compulsory

Q.1 What are software myths? Explain.

Q.2 What are fourth generation techniques? Explain.

Q.3 What is data dictionary?

Q.4 Explain the mechanics of software prototyping.

Q.5 What is RMMM? Explain.

Q.6 Differentiate between architectural design elements and interface design elements.

Q.7 Differentiate between verification and validation.

Q.8 What are the characteristics of a good quality software?

Q.9 What are object oriented metrics? Explain.

Q.10 What is UML?

PART – B   [5×4=20]

(Analytical/Problem solving questions)

Attempt all five questions

Q.1 Explain software engineering as a layered technology.

Q.2 What do you understand by Software Requirement Specification? Explain the need of SRS.

Q.3 What do you understand by design concepts? Explain each of them with the help of examples.

Q.4 What are software testing strategies? Explain.

Q.5 Differentiate between state diagram and interaction diagram with an example.

PART – C   [3×10=30]

(Descriptive/Analytical/Problem Solving/Design Questions)

Attempt any three questions

Q.1 Describe spiral model. What are its advantages and disadvantages? How it is different from other models?

Q.2 Draw a data flow diagram for Online Book Shopping System. The system supports from searching of books, order, order tracking, order cancellation, delivery and order return. Also, system support both online pre-payment and cash payment on delivery. Make necessary assumptions as required.

Q.3 An application has the following -

(i) 10 low external inputs

(ii) 12 high external outputs

(iii) 20 low internal logical files

(iv) 15 high external interfaces

(v) 12 average external enquiries

and complexity adjustment factor of 1.10.

Calculate unadjusted and adjusted function point counts.

Q.4 Write short notes on -

(a) Debugging

(b) Alpha and Beta testing

(c) System testing

(d) Software maintenance

Q.5 Mr. Sharma is trying to book a table at a fine dining restaurant to celebrate his wedding anniversary with his friends and relatives. However, due to time mismanagement and weekend rush hours, the Hotel Manager assigned the same table to some other guests. Due to this Mr. Sharma, his relatives and his friends had to wait for an additional hour for their turn. The Hotel Manager wanted to develop an efficient system for guaranteed table – booking so as to improve customer satisfaction.

Create a Class diagram and Use Case diagram for developing an efficient table booking system.