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Total No. of Questions : 09] [Total No. of Pages : 02

MCA (Sem. - 3rd)

SOFTWARE ENGINEERING

SUBJECT CODE : MCA - 402

Paper ID : [B0114]

[Note : Please fill subject code and paper ID on OMR]

Time : 03 Hours **Maximum Marks : 60**

Instruction to Candidates:

1) Attempt any one question from each Sections A, B, C & D.
2) Section - B is **Compulsory**.
3) Use of Non-programmable **Scientific Calculator** is allowed.

Section - A

(1 × 10 = 10)

Q1) List the different types of Software development Life cycle. Explain the spiral life cycle model and compare it with others.

Q2) What are the different types of design and software quality metrics used? Explain the significance of each of them using an example.

Section - B

(1 × 10 = 10)

Q3) (a) What is the structure of SRS documents? Explain its main characteristics.

(b) Explain the COCOMO-II cost estimation model in detail. How is it different from COCOMO-I.

Q4) Draw DFD and ER diagram for the following problem

"For each court case, the name of the defendant, defendant's address, type of the crime and the date of the crime committed, where committed, the name of the arresting officer and date of the arresting are entered by the court registrar. The unique number identifies each case. Each case has to maintain the name of the presiding judge, public prosecutor, the starting date and array of hearing dates and next trial date. On completion, it should maintain the judgment of the summary".

Section - C

(1 × 10 = 10)

Q5) What do you mean by a good design? Compare the conventional approach of Software design with the object oriented design.

Q6) (a) Explain the relation between the Analysis and Design model of a software system.

(b) Describe the concept of inheritance using an example.

Section - D

(1 × 10 = 10)

Q7) Design a black box test suite for a program that checks whether a character string is palindrome or not.

Q8) What is the need of software testing? Explain in detail about different types of testing.

Section - E

(10 × 2 = 20)

Q9)

a) Define Software process?

b) Define cohesion between modules.

c) Name any two method to determine the size of software.

d) What are semi - detached software?

e) Differentiate between problem and process based estimation.

f) Define polymorphism.

g) Describe any two characteristics of form design.

h) Distinguish between Alpha & Beta Testing.

i) Distinguish between Unit and Integration testing.

j) Distinguish between Fault vs Failure.