

MCA 3rd Semester Examination, 2019

MCA

(Software Engineering)

PAPER – MCA-305

Full Marks : 100

Time : 3 hours

Answer any five questions

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

1. (a) What do you understand by the expression 'life cycle model of software development'? Why is it important to adhere to a life cycle model during the development of a large software product? 2 + 3

(b) With the help of a schematic diagram explain the different activities carried out in the spiral model of software development. 2 + 7

2. (a) What is SRS ? Why we need SRS ? Explain the desirable characteristics of a good SRS documents. 1 + 1 + 4

(b) Consider the following requirements needed for a software to be developed for a Library Membership Automation System.

- add — new member
- renew — membership
- cancel — membership

If the user requests for any functions other than these three, then an error message is flashed. When an add-new member request is made, a new member record is created and a bill for the annual membership fee is generated. If renewal request is made, then the expiry date of the concerned membership record is updated and a bill towards the annual fee is generated. If a cancellation request is made, then the concerned

membership record is deleted and a cheque for the balanced amount is printed. Draw a decision tree as well as represent a decision table of the above problem. 4 + 4

3. (a) What do you mean by the terms cohesion and coupling. "A design is said to be a good one if it have high cohesion and low coupling" – Justify. 2 + 5
- (b) Briefly explain the different features of design. 7
4. (a) Draw a DFD of Restaurant Automation system upto its 3rd level along with its context diagram. 6 + 2
- (b) Write a short note on SA/SD methodology. 6
5. (a) What is Testing ? Explain the terms failure, test case and test suite associated with testing. 4
- (b) What do you mean by verification and Validation ? Explain the three levels of testing that a software product under goes during its development. 4 + 6

6. Differentiate between (any *two*) : 7 × 2
- (a) Black box approach and white box approach.
 - (b) Functional oriented and object oriented design approach.
 - (c) Evolutionary model and prototyping model.
 - (d) DFD and Flowchart.
7. Write short notes on (any *two*) : 7 × 2
- (i) Software Maintenance
 - (ii) UML
 - (iii) Code Review
 - (iv) Cleanroom software development testing
 - (v) Regression testing.

[*Internal Assessment – 30 marks*]
