END TERM EXAMINATION

SECOND SEMESTER [MCA] MAY-JUNE 2018

Paper Code: MCA-110   Subject: Software Engineering

Time: 3 Hours   Maximum Marks: 75

Note: Attempt any five questions including Q no.1 which is compulsory.

(10x2.5=25)

Q1   Answer the following in brief:-
(a) What are the different requirement elicitation techniques? Which one is most popular and why?
(b) What characteristics a good SRS must possess? Design SRS template.
(c) Differentiate function point and LOC.
(d) Discus the template of a test case.
(e) What is context diagram? Give an example.
(f) Define reliability and usability.
(g) Draw use case diagram of Online Examination System.
(h) Define mutation testing and mutation adequacy score.
(i) What is reverse engineering? Discuss the different levels of reverse engineering.
(j) What is feasibility study and why it is conducted?

Q2   (a) Explain the technique "Facilitated Application Specification Technique (FAST)". Compare and contrast it with Brainstorming sessions.   (6)
(b) Discuss the term software engineering? Explain the role of software life cycle model to develop a software? What are the different features of a project that helps in selecting the appropriate software life cycle model?   (6.5)

Q3   (a) Explain spiral software life cycle model with block diagram. Compare and contrast it with waterfall model.   (6.5)
(b) Explain use case and its components. Draw use case for online cab booking system.   (6)

Q4   (a) Explain the principle of Albrecht's function point. What are the different data function types and transactional function types. Discuss by taking an appropriate example.   (6)
(b) Suppose a project with estimated to be 500KLOC. Calculate the effort and development time for each of the three modes of basic COCOMO. What are different categories identified by COCOMO-II.   (6.5)

Q5   (a) Discuss different levels of Capability Maturity Model (CMM). Compare and contrast with ISO 9001.   (7.5)
(b) Explain the term modularity. How modularity can be controlled in a software.   (5)

Q6   (a) Discuss software reliability. Explain basic execution time model of software reliability.   (6.5)
(b) Explain token count. List the rules of counting for C language. Write a program in C and calculate program volume and program length.   (6)

Q7   (a) What is Software Maintenance? List out different models of maintenance and explain any one of them.   (6)
(b) What is the role of configuration management (CM)? List all the activities of CM. What is the procedure to request for a change in software? Explain with example.   (6.5)

Q8   (a) Define: path testing, data flow testing, verification and validation.   (8)
(b) What are the different types of tools that are available for testing purposes? Explain one static testing tool and one dynamic testing tool.   (4.5)

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