

S-772

Total Pages : 5

Roll No. -----

MCS-503

Software Engineering

(MCA/MSIT)

1st /3rd Semester, Examination 2022(Dec.)

Time: 2 Hours

Max. Marks: 70

Note : This paper is of Seventy (70) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein.

Section – A

(Long Answer – type questions)

Note: Section 'A' contains Five (05) long-answer-type questions of Nineteen (19) marks each. Learners are required to answer any two (02) questions only.

[2 x 19 = 38]

P.T.O.

Q.1. Answer the following:

- (a) Identify at least two salient features of a function-oriented design approach. (6 marks)
- (b) Identify at least three salient features of an object-oriented design approach. (6 marks)
- (c) Write down at least three differences between function-oriented and object-oriented design approach. (7 marks)

Q.2. Answer the following:

- (a) Define the term cohesion in the context of object-oriented design. (3 marks)
- (b) Outline an object-oriented development process. (5 marks)
- (c) Identify the necessity of CRC (Class-Responsibility-Collaborator) cards in the context of object oriented design. (6 marks)
- (d) Schematically draw the architecture of a CASE environment and explain how the different tools are integrated. (5 marks)

Q.3. Answer the following:

- (a) List five desirable characteristics that a good user interface should possess. (5 marks)
- (b) What is the difference between user guidance and on-line help system in the user interface of a software system. (7 marks)
- (c) Compare the relative advantages of command language, menu-based, and direct manipulation interfaces. (7 marks)

Q.4. Answer the following:

- (a) Identify the necessity of testing of a software product. (4 marks)
- (b) Distinguish between error and failure. Testing detects which of these two? Justify it. (4 marks)
- (c) Differentiate between verification and validation in the context of software testing. (4 marks)
- (d) Is random selection of test cases effective? Justify. (4 marks)
- (e) Write down major differences between functional testing and structural testing. (3 marks)

P.T.O.

Q.5. Answer the following:

- (a) Differentiate among basic COCOMO model, intermediate COCOMO model and complete COCOMO model. (6 marks)
- (b) What is meant by risk leverage? (4 marks)
- (c) Discuss how the reliability changes over the life time of a software product and a hardware product. (5 marks)
- (d) What do you mean by the term software reverse engineering? Why is it required? Explain the different activities undertaken during reverse engineering. (4 marks)

Section – B

(Short-answer-type questions)

Note: Section 'B' contains Eight (08) short-answer-type questions of Eight (08) marks each. Learners are required to answer any Four (04) questions only.

$$[4 \times 8 = 32]$$

Q.1. Identify the non-functional requirement-issues that are considered for any given problem description?

- Q.2. Identify four characteristics of a good software design technique.
- Q.3. Identify the necessity of constructing DFDs in the context of a good software design.
- Q.4. Write down the importance of data dictionary in the context of good software design.
- Q.5. Identify different types of views of a system captured by UML diagrams.
- Q.6. Write down basic differences between object-oriented analysis (OOA) and object-oriented design (OOD) technique.
- Q.7. When does the software planning activity start and end in software life cycle? List some important activities that a software project manager performs during software project planning.
- Q.8. What do you understand by Total Quality Management (TQM)? What are the advantages of TQM? Does ISO 9000 standard aim for TQM.
