

Professional Course Examination, Odd 2021
(Fifth Semester)
BACHELOR OF COMPUTER APPLICATIONS
Software Engineering - I
Full Marks: 75
Time: 3 Hours

The figures in the margin indicate full marks for the questions

(PART : A – OBJECTIVE)
(Marks : 25)

SECTION – I
(Marks : 15)

(1x10=10)

1. Choose the correct answer:
 - a) The design is importance for developing the quality product because:
 - i) Without design, we risk building an unstable system.
 - ii) May be difficult to test.
 - iii) Cannot be assessed for quality later in the software process
 - iv) All of the mentuioned
 - b) Software consists of ____
 - i) Set of instructions + data
 - ii) Programs + documentation + operating procedures
 - iii) Programs + hardware manuals
 - iv) Set of programs
 - c) Acceptance testing is also known as ____
 - i) Beta testing
 - ii) Alpha testing
 - iii) Black box testing
 - iv) White box testing
 - d) What is the major drawback of the Spiral Model ____
 - i) Higher amount of risk analysis
 - ii) Doesn't work well for smaller projects
 - iii) Additional functionalities are added later
 - iv) Strong approval and documentation control
 - e) Which of the following is known as incremental model?
 - i) Evolutionary Model
 - ii) Build and fix model
 - iii) Iterative waterfall model
 - iv) RAD Model

- f) Which of these distinctions of modular programs over non modular are true?
- i) They are not that easier to understand and explain
 - ii) They are not easier to document
 - iii) Testing and Debugging is complex comparatively
 - iv) They are easier to change
- g) ___ and ___ are the two issues of Requirement Analysis.
- i) Performance, Design
 - ii) Stakeholder, Developer
 - iii) Functional, Non-Functional
 - iv) All of the above
- h) In which environment we can performed the Alpha testing ___
- i) User's end
 - ii) Developer's end
 - iii) User's and Developer's end
 - iv) All of the above
- i) Size and Complexity are a part of ___
- i) Project Metrics
 - ii) Process Metrics
 - iii) Product Metrics
 - iv) Price Metrics
- j) Which of the following does not affect the software quality and organizational performance?
- i) Market
 - ii) Product
 - iii) Technology
 - iv) People

2. State whether the flowing statements are True (T) or False (F): (1x5=5)
- a) Reverse engineering can be made functional to dif=verse aspects of software development & hardware improvement.
 - b) At the end of feasibility study the systems analyst gives a summary feasibility report to the management.
 - c) Requirements validation process, do not check the requirements mentioned in the Software Requirements Specification (SRS).
 - d) Coupling is a qualitative indication of the degree to which a module can complete its function in a timely manner.
 - e) In size oriented metrics, metrics are developed based on the number of lines of code.

SECTION – II

(Marks : 10)

3. Answer the following questions: (2x5=10)
- a) i) Briefly discuss the need of software engineering.
 - OR
 - ii) What is the use of DFD during requirement analysis in software engineering?
 - b) i) What s data dictionary? Mention its uses.

OR

- ii) What are the goals of the design process?
- c) i) Differentiate between functional requirement and non-functional requirement.
OR
- ii) Distinguish between error and failure. Which of the two is detected by testing? Justify
- d) i) What are the objectives of software testing? What are the reasons behind to perform beta testing?
OR
- ii) What are the advantages of functional independence?
- c) i) What do you mean by software re-engineering? What is the main objective of re-engineering?
OR
- ii) Usability of a software is tested during which type of testing: Unit, Integration or System Testing?
How is usability tested?

(PART :B – DESCRIPTIVE)
(Marks :50)

- 4. a) What benefits are derived from using a systems development methodology? Explain advantages of RAD model in Software Development. (2+3=5)
- b) Explain the likely consequences of starting a large project development effort without accurately understanding and documenting the customer requirements. (5)
- OR
- c) If you must develop a local grocery retailer sales and stock management software product, what process model will you choose? Justify your answer. (5)
- d) What is a prototype? Under what circumstances is it beneficial to construct a prototype? (2+3=5)
- 5. a) What are the objectives of feasibility study phase of software development? Explain the important activities that are carried out during the feasibility study phase of a software development project. (2+3=5)
- b) What are the different types of requirements gathering activities that the analysts used to gather requirements from a customer? Give examples of each. (5)
- OR
- c) List & describe various characteristics of an SRS. (5)
- d) What are the main activities carried out during requirement analysis and specification phase? (5)
- 6. a) What are the Properties of Modular Design? How to Achieve good modular design? In what circumstances bottom-up approach is chosen over the top-down approach of software design. (3+4+3=10)
- OR
- b) What are the relative advantages of object-oriented and function-oriented approaches to software design. (5)
- c) Differentiate between reactive risk and proactive risk strategies. (5)
- 7. a) Explain basic COCOMO Model in details. (5)
- b) What is meant by the size of a software project? Why does a project manager need to estimate the size of the project? (2+3=5)
- OR
- c) List the important activities of software manager perform during the project manager. (5)

- d) What is software reliability and how this parameter helps in managing software quality? Define the attributes of good software. (2+3=5)
8. a) Distinguish between Software verification and validation. When is the verification and validation performed during the software life cycle? (3+2=5)
- b) Explain why every software system must undergo maintenance of progressively become less useful. What are the types of software maintenance based on their characteristics? (2+3=5)
- OR
- c) What is the alpha, beta and acceptance testing? (4)
- d) What do you mean by the term reverse engineering? Explain the different activities undertaken during reverse engineering. (2+4=6)

BCA/5/CC/25