

- N.B.**
1. All questions are compulsory.
  2. Make suitable assumptions wherever necessary and state the assumptions made.
  3. Answer to the same questions must be written together.
  4. Numbers to the right indicate marks.
  5. Draw neat labelled diagram wherever necessary.
  6. Use of Non-Programmable calculators is allowed.

- Q. 1** Attempt any four of the following 16
- a What is component diagram? Draw and explain symbols for the same.
  - b Draw activity diagram for Online shopping system.
  - c State and explain the activities in SDLC.
  - d Explain Spiral model.
  - e Draw class diagram for library management system.
  - f How to draw and where to use Deployment diagram.
  - g What is Use Case? Draw the use case diagram for online shopping system.
  - h Write a short note on Extreme programming.

- Q. 2** Attempt any four of the following 16
- a Define Object-Oriented Programming and features of OOPs.
  - b State the disadvantages of LOC. How is it different from COCOMO?
  - c Define coupling what are the various levels of coupling.
  - d What is Estimation? Explain basic steps in Software Project estimation.
  - e What is product metrics? Explain types of product metrics.
  - f Calculate Cyclomatic Complexity for following:
    - i. Read A
    - ii. Read B
    - iii. If  $A > 0$  Then
    - iv. If  $B = 0$  Then
    - v. Print "No values"
    - vi. Else
    - vii. Print B
    - viii. If  $A > 21$  Then
    - ix. Print A
    - x. ENDIF
    - xi. ENDIF
    - xii. ENDIF.
  - g Explain Software user interface design.
  - h What is ER model? Explain terms used in E-R model.

- Q. 3** Attempt any four of the following 16
- a Which are various kinds of risks in Software development?
  - b Define Test Case, Test Plan.
  - c Explain Capability Maturity Model.

Duration : 2 Hours

- d Explain Alpha and Beta Testing. Write down any 2 points of difference in them.
- e Define Testing. Explain the objectives of Testing.
- f Write a note on Software Quality Assurance
- g Write a short note on Risk Mitigation, Monitoring and Management.
- h Explain characteristics of Six Sigma.

**Q. 4**

**Attempt any Three of the following**

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- a Draw Sequence diagram for ATM System.
- b State advantages and disadvantages of waterfall model.
- c Write difference between Function-oriented and Object-oriented design.
- d Which are the different strategy used in Agile estimation to Software development projects.
- e Define and explain ISO Quality Standards.
- f Explain Unit testing and Integration testing.

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