

- N.B.: (1) Question No 1 is Compulsory.  
(2) Attempt any three questions out of the remaining five.  
(3) All questions carry equal marks.  
(4) Assume suitable data, if required and state it clearly.

- Q1. **Attempt any FOUR.** [20]
- a Functional independence of a software design is assessed using which two criteria? highlight the differences between both. [5]
  - b Define Software Engineering. Describe in brief Umbrella activities of software development. [5]
  - c What are stubs and drivers? How are they different from each other? [5]
  - d Differentiate between white box and black box testing. [5]
  - e Explain size-oriented software engineering Metrics. [5]
- Q2. a Explain any two requirement models using suitable example. [10]
- b Explain COCOMO II cost estimation model in detail. [10]
- Q3. a Discuss in detail about project Scheduling and Tracking. [10]
- b A distance learning institute decides to use E-learning software. The tool will be used by students to register for various online courses, download study material, view lecture videos, upload assignments and appear for online exams. Faculty can take attendance, upload study material, conduct quizzes & exams online and teach one or more courses. Institute can see information about faculty and students, display results etc. Create an SRS document that includes [10]
- a) product perspective
  - b) Scope and objective
  - c) Functional requirements
  - d) Nonfunctional requirements
- Q4. a What is Agility in context of software engineering? Explain with suitable diagram Scrum framework. [10]
- b Elaborate different types of software risks? Create Risk information sheet for a risk of high staff turnover. i.e., risk of many current employees working on the project leaving an organization. [10]

- Q5. a Explain Software Design concepts in detail. [10]  
b Discuss in detail about Spiral Model. In which kind of situation spiral model should be used? [10]
- Q6. a Explain what is cyclomatic complexity? What are the different ways to calculate it? Perform basis path testing on a program which asks user to enter 3 sides of a triangle and checks whether Triangle is Isosceles, Equilateral or Scalene. [10]  
b Explain McCall's quality factors. Explain SQA Activities. [10]