Duration: 2 Hours   Total Marks: 50

Instructions: 1)   All Questions are **Compulsory**.
2)   Figures to the right indicate Full Marks.
3)   Write assumptions wherever required & Support your answers with relevant diagrams.

Q1. Answer the following   **2 x 5 = 10 Marks**

- i.   Mention any 4 strengths of Unified Process Model.
- ii. Define Requirements and its types.
- iii. Define Use-case modeling.
- iv. Mention any 4 techniques for Requirements Elicitation.
- v.   Define Software Requirement Specifications (SRS).

Q2. Answer the following Questions   **10 Marks**

- a) Explain any 2 challenges of Software Engineering.   **(02)**
- b) Explain any 3 Software quality attributes.   **(03)**
- c) Explain the characteristics of Waterfall Modal of Software Development along with the Diagram, Strengths, and Weaknesses.   **(05)**

Q3. Answer the following Questions   **10 Marks**

- a) Define User and System Requirements.   **(02)**
- b) With respect to Sequence Diagram, define lifeline, activation box and message. Represent it using suitable diagram.   **(03)**
- c) Consider the Problem definition given below of an *"Online Order Processing System"* and **draw Class Diagram** with relevant attributes. You may show relevant methods. Make and State suitable assumptions, if any.   **(05)**

  A Customer can place an order using online order processing system. An order can contain list of one or many items/ products along with necessary details like cost, number of units, type etc…The order may contain date of order, total amount and other required details. The system also manages (i.e. add, update, delete) the details of customer, order details, stock details, and payment details. The customer can choose payment type which can be online, card, or payment on delivery. Before placing an order customer has to register and obtain user id and password.

Q4. Answer the following Questions 10 Marks

a) Explain Elaboration phase of Requirements Engineering Process. (02)

b) Explain any 3 advantages of performing Feasibility Study. (03)

c) Consider the problem definition given below of an *"Online Examination Registration System"* and **draw use case diagram**. (05)

The college is providing the facility of online examination registration. Using this software the candidate can see the examination schedule, select the subject to register for the exam, enquiry about the registered subject, modify their personal details, can cancel their registered subject. The schedule for the examination, venue details, seating arrangements, approval of online examination registration form has to be managed by the administrator. The users of the system have to login to the system before any processing can be done.

Q5. Answer the following Questions 10 Marks

a) Define State and Transition with respect to UML State Chart diagram. (02)

b) Explain any 3 importance of using SRS. (03)

c) What is the purpose of using an Activity Diagram? Define and explain the use of branch, fork, join and swimlane. (05)