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Shree Damodar College of Commerce & Economics, Margao-Goa  
S.Y.BCA, SEM IV, May/June Supplementary Examination 2017

**SOFTWARE ENGINEERING (BCA 401)**

**Duration: 2 Hours**

**Max. Marks: 50**

**Instructions:**

- *Figures to the right indicate maximum marks.*
- *Start each question on a fresh page*
- *All questions are compulsory*

**Q1. Define the following in one or two sentences**

**(10 x 1 = 10)**

- a) Software Engineering
- b) Dual role of software
- c) Requirements
- d) Object
- e) Association
- f) Sequence Diagram
- g) Transitions
- h) SRS
- i) Milestone
- j) Gantt Chart

**Q2. Answer the following questions**

**(10)**

- A. What are the different phases of a unified process model? (2)
- B. Mention any six Operational Characteristics that software should have? (3)
- C. *Person X approached to a software development company and asked them to design & develop Customer Relationship Management software for his company. He could provide them the vague idea about the requirements and mentioned that user interface is very much important. Which process model would you suggest in this case and why? Also explain this process model briefly.* (5)

**Q3. Answer the following questions**

**(10)**

- A. Give any four examples of non-functional requirements. (2)
- B. What is the purpose of using an Activity Diagram? Using an example show the use of fork and join. (3)
- C. Define use case diagram. Explain each of the following by giving examples: use case, actors, extend and include use case relations. (5)

**Q4. Answer the following questions**

**(10)**

- A. In sequence diagram, explain how synchronous message is different from Asynchronous message? (2)
- B. Draw the state diagram for Car object showing its major states & transitions. (3)

- C. Draw the class diagram for the system mentioned below. (Make and state suitable assumptions, if any). (5)

*A University maintains data of its students, the programmes (B.Com, BCA, BBS) they are registered in and the address information of the students. The database needs to store the programme duration and fees. A programme consists of semesters. For each semester the student has to study certain subjects where each subject has a code, number of credits associated with it. The system should keep track of the marks scored by the students. Some of the constraints that may be assumed for the University database system are: a student can take only one programme at a time, a subject may be part of more than one programme.*

**Q5. Answer the following questions (10)**

- A. What are the steps to draw Gantt Chart? (2)
- B. Why a feasibility study is necessary before project development? (3)
- C. What are the different techniques of requirement elicitation? Briefly, explain any two of them. (5)
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