

Vidya Vikas Mandal's
Shree Damodar College of Commerce & Economics, Margao-Goa
S.Y.BCA, SEM IV, END SEMESTER EXAMINATION, APRIL 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) Agile Methodology
- b) Software
- c) Software Process
- d) Reusability
- e) Functional requirements
- f) UML
- g) Use Case Actors
- h) Feasibility Study
- i) SRS
- j) Gantt Chart

Q2. Answer the following questions **(10)**

- A. Explain the dual role of software?** **(2)**
- B. For each of the following, mention whether it is functional or non-functional requirement.** **(3)**
 - i) The website should work from 1.00 am till 12.00 midnight every day.
 - ii) The website should have login facility.
 - iii) In case website is crashing, it should recover within 10 minutes of time.
- C. Discuss Spiral process model along with diagram, its strengths and weaknesses?** **(5)**

Q3. Answer the following questions **(10)**

- A. What do you mean by operational feasibility?** **(2)**
- B. Draw the use case diagram for the registration system given below. (Make and state suitable assumptions, if any).** **(3)**

Through an online system a teacher can offer different courses and interested learner can register for the online courses. The learner can download the study materials and submit the assignments and the teacher can upload the study materials and the assignments. In order to access the system, the learner as well as teacher has to login.

- C. Draw the class diagram for the system mentioned in Q3. B. above along with the additional information given below. (Make and state suitable assumptions, if any).** **(5)**

A teacher can offer many courses and student can register for only 2 courses. Courses can have many study materials and each course has only one assignment.

The system maintains the personal details (name, gender, address, email, etc...) of the learners and teachers, details (id, credit, description, name ...) of the courses, registration details (registration no., date, etc...), Study materials (id, size, type etc...) details and assignment details (id, marks, last date of submission).

Q4. Answer the following questions (10)

- A. Mention any 4 characteristics of good SRS. (2)
- B. Why we use sequence diagram? Draw a sequence diagram for returning a book to the library. (3)
- C. Draw an activity diagram for issue and return of books in a library. (5)
For returning a book, a student waits in a queue and returns the book to the librarian. For issuing the book, a student searches for the book, selects the book, wait in a queue and requests to librarian for issue. The book is issued only if the student is a member and has not exceeded the limit of 5 books.

Q5. Answer the following questions (10)

- A. What are the benefits of using a Gantt Chart? (2)
 - B. With respect to State diagram define and give the graphical notation (syntax) for State, Action and Transition. (3)
 - C. Explain seven different phases (tasks) of requirement engineering? (5)
-