Vidya Vikas Mandal's
Shree Damodar College of Commerce & Economics, Margao - Goa
SY BCA, Semester-IV, Semester End Examination, June 2022
Software Engineering (CAC-113)

Duration: 2 Hours | Total Marks: 60

Instructions: 1) *Figures to the right indicate Full Marks.*
2) *All Questions are compulsory.*

Q1. **A) Define the following terms.** (5 x 1 = 5)
(a) Agile Software Development.
(b) Sprint.
(c) Code Refactoring.
(d) Black box testing.
(e) Quality Assurance.

Q1. **B) Answer the following terms.** (5 x 1 = 5)
(a) List any 2 characteristics of good software.
(b) Indicate, whether it is true that scrum framework works by dividing the large product into small sub-products like a divide and conquer strategy?
(c) Name any 2 scrum software / tools used by agile teams in managing projects.
(d) State the use of scrum board in the Scrum Framework.
(e) List any 2 Version Controlling Tools / Systems.

Q2. **Answer the following** 10)
A) Explain the purpose of Branching and Merging in Version control. (02)

B) Explain any 3 (three) types of environments in build and release infrastructure. (03)

C) Determine a suitable Software Development Life Cycle (SDLC) Model for each of the following mentioned scenarios? Support your answer with suitable reasoning? (05)
   i) You are asked to work on a software project for managing elections. The software requirements are clear. This system needs an accuracy, privacy, deep business understanding and risk management and excellent testing cases.

   ii) ABC is an international software house. ABC is currently working on a project that is totally new for the development team and even the client is confused about the requirements of this project. Hence this company is facing difficulties because they fail to apprehend user requirements properly. For this project, it is decided to build a sample application and show it to the client for feedback.

Q3. **Answer the following** (10)
A) Illustrate the scrum development process diagrammatically by outlining key roles, ceremonies and artifacts. (02)

B) Explain your understanding of the following Agile Principles. (03)
   i) Simplicity—the art of maximizing the amount of work not done—is essential.
   ii) Working software is the principal measure of progress.

C) Explain the good practices recognised in the XP (Extreme Programming) methodology of software development. (05)

Q4. **Answer the following** (10)

A) Write any two relevant user-stories for designing and developing the Registration (02) Page of Student Management System.

B) Employ the understanding of scrum burn-down chart to display the tasks completed (03) over the duration of the sprint by plotting a graph for the data tabulated below.

Tasks	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
Design the Login Page	8	4	10	4	0	0
Code the Business Logic	16	14	16	8	4	0
Test the Business Logic	8	14	12	8	4	4
Write online help	12	8	8	8	0	0

C) Explain any two ceremonies of the Scrum Framework outlining its purposes, (05) attendees, timing and duration of conduct.

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

A) Differentiate between product backlog and sprint backlog (02)

B) Determine the suitable testing technique for the scenarios below mentioned. (03)

   i)   To check whether computation is valid or not when salary of an employee is between 20,000 and 10,000.

   ii) To check all the branches of the code is executing or not.

   iii) To find out the logic complexity of the code.

C) Explain the roles and responsibilities of a Scrum Master, Product Owner and (05) Development Team in the Scrum Framework.

Q6. **Answer the following** (10)

A) List any 2 benefits of refactoring techniques. (02)

B) List any 3 advantages of Unit Testing. (03)

C) Discuss any 2 variations and 2 advantages of pair programming. (05)