Birla Institute of Technology & Science, Pilani
Work Integrated Learning Programmes Division
First Semester 2024-2025

Mid-Semester Test
(EC-2 Regular)

Course No.   : SE ZG544
Course Title   : Agile Software Process
Nature of Exam   : Closed Book
Weightage   : 35%
Duration   : 2 Hours
Date of Exam   : 21/09/2024 (AN)

No. of Pages   = 2
No. of Questions = 7

Note to Students:
1. Please follow all the *Instructions to Candidates* given on the cover page of the answer book.
2. All parts of a question should be answered consecutively. Each answer should start from a fresh page.
3. Assumptions made if any, should be stated clearly at the beginning of your answer.

Q.1   Project-X: This project involves the development of a cutting-edge artificial intelligence application that will revolutionize the healthcare industry. The project is characterized by high uncertainty in terms of technology, market demands, and regulatory landscape. The client is actively involved and understands that requirements will evolve as the project progresses.

      Project-Y: The company has also taken on a project to upgrade a well-established legacy system for a financial institution. The project comes with a comprehensive and unchanging set of requirements due to the rigid regulatory environment of the finance sector. The client emphasizes thorough documentation and traceability to ensure compliance with industry standards.

      As an Agile consultant, recommend suitable Project life cycle methodologies for each project along with the rationale behind your choice. Highlight the key stages or phases involved in implementing the chosen methodologies for both projects.   [5]

Q.2   As per the Standish report 2015, a larger percentage of projects failed mainly due to adapting traditional waterfall approach to project development.   [2+2]
   Q. 2.1 Explain the issues involved in waterfall development model and why there was a need for project management makeover?
   Q. 2.2 Explain the benefits of using Agile method over Waterfall method with respect to handling project risk and product adaptability?

Q.3   As a practitioner in Agile software processes, your expertise extends beyond methodologies to encompass effective decision-making frameworks. One such framework is the Cynefin framework. Explain the Cynefin framework in the context of project management and its relevance in classifying projects or tasks.   [4]

SE ZG544 EC-2R First Sem 2024-25

Q.4   Explain how each of the Agile practices listed below supports the following
       perspectives (A, B,C).   [5]
       A. Human: Cognition and social aspects
       B. Organizational: managerial , cultural and process considerations
       C. Technological: Practical, technical and product considerations
                            Agile Practices:
                       1. Whole team
                       2. Short releases
                       3. Measures
                       4. Customer collaboration
                       5. Test-driven development

Q.5   Outline five essential techniques that Agile (XP) teams employ for ensuring high-quality
       product delivery. Concisely describe these methods, emphasizing their role in detecting
       and resolving problems.   [5]

Q.6   Your team is tasked with developing a new e-commerce platform.
       Q. 6.1 Provide a detailed breakdown of how you would orchestrate the various Scrum
               ceremonies throughout a typical sprint cycle (e.g., 2 weeks). Include specific actions,
               roles, and objectives for each ceremony, showcasing how they contribute to the
               success of the project.
       Q. 6.2 Additionally, address any potential challenges you might encounter and how you
               would mitigate them.   [5]

Q.7   A team spent 10 days designing a feature and 15 days coding it. The team distributed the
       design documents and code and had them reviewed by a few experts. The review took 40
       hours because the reviewers requested clarifications back and forth. It took two days to
       incorporate the review. During the review, the team's productivity was 50% of the review
       effort. 1day= 8 working hours.   [2+5]
       Q. 7.1 Propose a process improvement step to improve the review process.
       Q. 7.2 Assume that your process improvements resulted in a 40% reduction in review
               effort and 1 day reduction in review incorporation. Can you create a value stream
               map of this process before and after the improvement? How much has overall
               efficiency increased?