

**BHARATIYA VIDYA BHAVAN'S**  
**SARDAR PATEL INSTITUTE OF TECHNOLOGY**  
MUNSHI NAGAR, ANDHERI (WEST), MUMBAI - 400 038.  
(Autonomous College Affiliated to University of Mumbai)  
**MASTER OF COMPUTER APPLICATIONS**

**End Semester Examination**  
**March 2023**

**Max. Marks: 100**

**Class: FY MCA**

**Course Code: MC503**

**Name of the Course: Software Engineering**

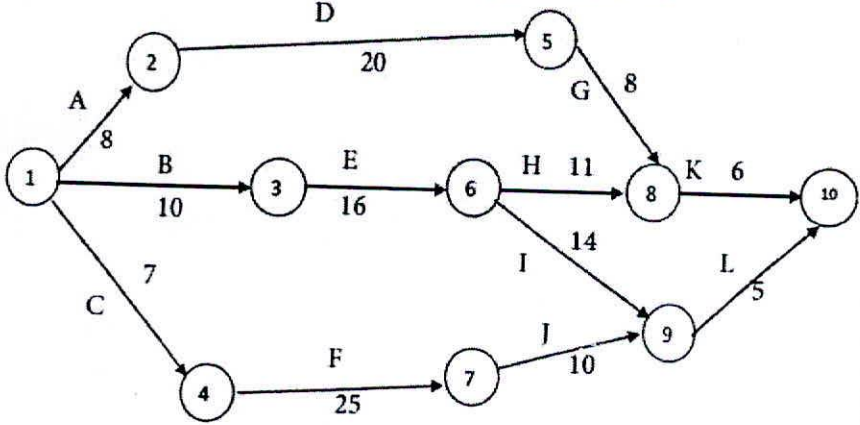
**Duration: 3 hours**

**Semester: I**

**Date: 13/03/23**

**Time: .02.00 p.m. to 5.00 p.m.**

Q No	Questions	Ma x Mar ks	CO	B L
1(A)	What ideas validate the formation of Agile Principles and Values ?	12	1	4
1(B)	Categorize and Explain at least two types of Requirement Elicitation techniques which are used for developing Long term Projects.	8	1	4
2(A)	Elaborate any one design pattern that provides a strategy to solve a common problem in software. Assume a suitable example to justify your answer.	12	2	6
2(B)	<p>Construct a suitable software architecture diagram to represent the interaction for the following scenario (Any 1) -</p> <p>(a) In video processing, an unprocessed video undergoes a series of transformations to become a processed video that can serve a more useful purpose. The image frames from the live video recorded serve as the input data and are sent into the application via the data source. Once in the pipeline, the data is transported via pipes between each component. From the data source, the data goes through a series of filters sequentially, each processing the data to make it more useful for the next filter order to achieve the eventual goal of object detection. Eventually, the processed data, which in this case is the input image frame with bounding boxes drawn around objects of interest, is served as the application's output in the data sink.</p> <p style="text-align: center;">OR</p> <p>(b) Let's say your directory/ folder for this semester contains many files from different subjects and is extremely unorganised. You wish to create a SE folder which should have SE lecture slides.</p>	8	2	6

	Let's also assume your lecture slides should be organised chapterwise where each chapter is a folder and saved by respective module name e.g. "SE Unit 1 Introduction Topic".			
3(A)	Justify why one of the Agile Estimation techniques is considered to be more of a decision making tool .	12	3	3
3(B)	<p>Given the following values, compute function points when all complexity adjustment factors (CAF) and weighting factors are average.  User Input = 40 ,User Output = 30,User Inquiries = 25,User Files = 5,External Interface = 3</p> <p>OR</p> <p>You are appointed as a Project Manager of ABC Multimedia Ltd,the project allotted is of 8 months duration.The budget of the Project is around 85 lacs.You have the responsibility to create the following (2mks each)</p> <p>a) OBS b) WBS c) R.A.M d) Staff Management Plan</p>	8	3	3
4(A)	<p>Following is the given data of WorkBreakdown Structure</p>  <p>a. Calculate ES,LS,EF,LF for each node  b. Determine the Critical Path and Critical Activities  c. Explain what do you mean by Critical Path</p>	10	3	3
4(B)	<p>Following password field accepts minimum 6 characters and maximum 10 characters.  <b>Enter Password:</b> <input type="password"/></p> <p>a) Apply Equivalence Partitioning on the given scenario.  b) Apply Boundary Value Analysis on the given scenario.</p> <p>OR</p> <p>Apply appropriate Test cases for give User Story using Agile Testing method for the given scenario -  User story for the shopping cart - <i>As a buyer I want to be able to add items to my shopping cart So I can purchase them.</i></p>	10	4	3



5(A)	You work for a large “social networking” company which has recently introduced a one-to-one chat mechanism, promising that they will never censor conversations. Users are now reporting that their friends’ computers are being compromised by malicious software. When users click on links within messages sent by this malicious software, their machine is also compromised, and spreads the infection still further. A crisis meeting has decided that the chat software must be modified to block this “worm” behavior. According to you, s manager of this project, which software quality factors failed to ensure its working?	05	4	3
5(B)	Identify different types of Software Project Risk the Team encounters in the complete Project Life cycle.	05	4	3
5(C)	Using what you have learned ,how would you solve the real time challenges in Software Engineering (Select any 1 topic ) :- 1.Cohesion and Coupling 2.3R -Refactoring Reengineering Reusability 3.Cleanroom Software engineering 4. Cost Benefit Analysis	10	1,2,4	3

