Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (W), Mumbai : 400058, India

(Autonomous College of Affiliated to University of Mumbai)

RE

End Semester Examination

December 2022

Maxi Marks : 100 Duration : 3 hours

Class :TE COMP/IT Semester : V

Course code: CS/IT 302Branch :CS/IT

Name of the course :Software Engineering

Note: 1. Make Suitable Assumptions wherever necessary
2.All questions are compulsory.
3.Draw neat diagrams.
4. All questions are compulsory.

Q No		Max Marks	CO	BL
Q1)	List 4 difference between Agile SCRUM and Agile XP model Choose the best life cycle model for developing following software applications. Justify a) Well understood library automation software to link various libraries in the city. User involvement is minimum in this project b) An extremely large software that would provide, monitor and control cellular communication among its subscribers using a set of revolving satellites **OR** Is the number of loops of the spiral model fixed for different development projects? Justify. With the help of a diagram explain spiral process model.	4+6	CO1	4
Q2a)	A group diary and time management system is intended to support the timetabling of meetings and appointments across a group of co-workers. When an appointment is to be made which involves a number of people, the system finds a common slot in each of their diaries and arranges the appointment for that time. If no common slots are available, it interacts with the user to rearrange their personal diary to make room for the appointment.Will you choose monolithic architecture or micro services architecture for this application? Justify Describe Microservices architecture with the help of a diagram.	4+6	CO3	4
Q2b)	How can you apply DevOp for your project. Explain DevOp with the help of a diagram.	5	CO5	3
Q3a)	Will exhaustive testing guarantee that the program is 100 percent correct? Justify A program reads 3 integer values. The 3 values are interpreted as	2+4 +4	CO4	3

	representing the lengths of the sides of a triangle. The program checks if it is a triangle and prints a message that states whether the triangle is scalene, isosceles or equilateral and not triangle. Create pseudo code for the function and calculate cyclomatic complexity using number of nodes and edges.			
Q3b)	What is Formal Technical Review (FTR) in SQA? Explain the steps to perform FTR.	5	CO4	3
Q.4a)	Do a functional decomposition/Work breakdown structure of the on-line social networking site. Estimate the size of each function in LOC. Assuming that a organization produces 450 LOC/pm with a burdened labor rate of Rs.7000 per person-month, estimate the effort and cost required to build the software using LOC-based estimation technique.(Assume suitable data for functional decomposition)	10	CO3	3
Q.4b)	What are the different types of risks that a typical software project might suffer from? Give examples of each type of risk. What are the strategies for risk mitigation?	10	CO3	2
Q.5a)	What is swimlanes? Draw Activity Diagram with swimlanes for student admission process in Engineering College.	10	CO2	3
Q.5b)	What are the different types of Black box testing methods? Give examples of each.	10	CO3	2
Q.6a)	List four advantages of using design patterns? Explain Adaptor and singleton design patterns.	10	CO2	1
Q.6b)	Develop the SRS document for the First year Engineering Admission System.	10	CO1	3