



Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058, India
(Autonomous College Affiliated to University of Mumbai)

End Semester Examination

Nov - Dec 2018

Make-up Exam

Max. Marks: 60

Class: T.E.

Course Code: IT51

Name of the Course: Software Engineering

Duration: 3Hrs
Semester: V
Branch: Information Technology

Instruction:

- (1) All questions are compulsory
- (2) Draw neat diagrams
- (3) Assume suitable data if necessary

Q No.		Max. Marks	CO
Q.1 (a)	What is the objective of the feasibility study of software development? With suitable example describe any three types of feasibility.	2	1
Q.1 (b)	With the help of diagram describe Extreme programming process in detail. OR Why use a development process? Assume that you are a project manager of three projects with the following characteristics: Project 1. A complex real-time system whose requirements can be relatively easily identified and are stable. Project 2. A web-site for a local library. Requirements are vague and are likely to change in the future. Project 3. An order processing system with a web-site for a local business. Which process models would you choose for each of these projects? Justify your choice.	3 7 1 6	1
Q.2 (a)	Assume that the size of an organic type software product has been estimated to be 32000 lines of source code. Assume that the average salary of a software developer is Rs.15, 000 per month. Determine the following using COCOMO model. a) Effort required developing the software product. b) The nominal development time. c) The cost to develop the product	2 2 2	3
Q.2 (b)	In a software development organization whose responsibility is it to ensure that the product are of high quality? What are the objective of Formal technical reviews Describe any three guidelines for formal technical reviews.	1 2 3	3

Q.3 (a)	<p>You have been asked to project manage the development of a small, interactive system for a village library. The system will provide functionality for adding new members (borrowers), updating members' details, lending books and returning books. Discussions with the library staff have revealed the following facts: There is some confusion and uncertainty about the content and layout of the interface and also the requirements for adding new members and updating members' details; the library may soon be taken over by the main city library.</p> <p>Discussions with your Software Engineers have revealed the following facts: the uncertainty about the requirements means that the total development time will be difficult to predict; some of the new team members are unfamiliar with testing tools; some key team members may be unavailable at critical times; the team are planning to use some reusable software components which to date have not been tested.</p> <p>a) Identify TWO risks from the case study. b) Create a risk checklist. c) Choose some mitigation action that is appropriate for each risk.</p>	2 2 4	3
Q.3 (b)	With the help of example describe the concept of baseline in terms of software configuration management?	4	3
Q.4 (a)	<p>Consider the following scenario.</p> <p>Video-Rental LTD is a small video rental store. The store lends videos to customers for a fee, and purchases its videos from a local supplier. A customer wishing to borrow a video provides the empty box of the video they desire, their Membership card, and payment – payment is always with the credit card used to open the customer account. The customer then returns the video to the store after watching it. If a loaned video is overdue by a day the customer's credit card is charged, and a reminder letter is sent to them. Each day after that a further card is made, and each week a reminder letter is sent. This continues until either the customer returns the video, or the charges are equal to the cost of replacing the video. New customers fill out a form with their personal details and credit card details, and the counter staff gives the new customer a membership card. Each new customer's form is added to the customer file. The local video supplier sends a list of available titles to Video-Rental LTD, who decide Whether to send them an order and payment. If an order is sent then the supplier sends the requested videos to the store. For each new video a new stock form is completed and placed in the stock file.</p> <p>a) Construct a Context level DFD for the above scenario. b) Decompose your answer in Level 1 and Level 2 DFD</p>	2 6	2
Q.4 (b)	<p>Design pattern describe what?</p> <p>What types of design patterns are available for the software engineer?</p> <p style="text-align: center;">OR</p> <p>Describe any four user interface design principles.</p>	1 3 4	2
Q.5 (a)	<p>Define Testability.</p> <p>Describe any five characteristics of testability.</p>	1 5	4

Q.5 (b)	How testing for real time systems are different from conventional system testing?	2	4
	What is an effective strategy for testing a real-time system?	4	
	OR		
	The validation and verification process ensures that software is 'fit for purpose'. Describe the difference between validation and verification.	2	
	With the help of diagram describe the overall strategy for software testing.	4	