

Printed Pages – 6

Roll.No. :

322654(22)

B. E. (Sixth Semester) Examination, 2020

APR-MAY 2022

(New Scheme)

(CSE Branch)

(Specialization : Computer Science and Project Engg.)

**SOFTWARE ENGINEERING & PROJECT
MANAGEMENT**

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Part (a) is of 2-marks and parts (b), (c) and (d). are of 7-marks. Part (a) is compulsory and attempt any two from (b), (c) and (d). Assume any missing data. use diagrams wherever required.

Unit-I

1. (a) "Software Engineering is a layered technology" justify this statement.

322654(22)

PTO

- (b) Assume that you are a project manager in a company which is at CMM level 2 and need to upgrade to CMM level 3. Suggest the key process areas on which you should stress in order to attain the next level.
- (c) Assume that you are in-charge for developing an online library management system for an engineering college. The customer has suggested that they would first like to see a working model of the project and then suggest further changes. Your team has a divided view, one half is insisting in using the Prototyping Model and the other half is insisting to use Component Assembly Model. Decide and justify your choice.
- (d) Assume that you are in-charge for developing a critical project that manages the data coming from a MRI machine. You have already done similar type of projects in past and have a huge repository of object and classes for the purpose. Suggest and justify which software development model is best suited for the project.

Unit-II

2. (a) Explain Requirements Engineering and its impact on the project.

- (b) Assume that you are in-charge of developing an online employee management system for an engineering college. Develop a software requirement specification document so that the technical team can understand the project.
- (c) Assume that you are in-charge of developing an online hotel booking application. Develop the context, data and behavioural model for the project, explaining each step.
- (d) Assume that you are in-charge for developing an online public grievance cell portal for the state government. This portal is meant to be used by the common man to raise issues and problems that a person faces in government offices. Explain how would you perform technical, operational, economic and managerial feasibility study for the project.

Unit-III

3. (a) "Modularization is an important criteria during design." Justify this statement.
- (b) Develop a work break down structure for building a recover password form, which should have following fields username, security question, security

answer, email and contact number. Explain each step.

- (c) Suppose that you are in-charge of developing a module that would be used to register new users and verify user login using an underlying database. Suggest steps that you would follow to create the contents for Data, Architectural, Interface and Procedural design for the module.
- (d) Suggest the steps that you would follow to perform function point analysis of a software application. Also explain why function point analysis is done.

Unit-IV

4. (a) "Are we making the product right" and "Are we the right product." Which of them is verification and which one is validation.
- (b) Suppose that you're the in-charge of developing a module that performs removing duplicate user-names-from the database through a web based interface. Suggest the various inputs the user has to give for registration and also specify the various test cases that should be used to ensure that the module will run without problems.

- (c) Suppose that you are in-charge of developing an online book selling application. Suggest how would you perform white-box, black-box, validation, system and integration testing for the project.
- (d) For the estimated lines of code 1875430. Use COCOMO model to perform the estimation of Effort, number of people required and duration for organic, semi-detached and embedded categories of projects.

Unit-V

5. (a) Explain ISO9000 quality standards in software industry.
- (b) Assume that you are in-charge for developing an online computer related product order/delivery website. Explain how would you perform Risk Management procedures in the project.
- (c) Compare Inspections, Desk-check, Walkthrough, Code Review, and Pair Programming with example scenarios for each of them.
- (d) Suppose that you are in-charge of managing a software project that extracts data from various remote servers and performs analysis of the data and generates daily, weekly and monthly reports.

It also generates alerts if deviation from mean occurs or a set of conditions are not met. The project involves 50 people, out of which 10 are trainees, 20 are specialists, 10 are developers and remaining 10 are supporting staff. Create a list of risks that are possibly can affect the project. Develop and Risk Management plan using which you can reduce the possibility of a risk becoming reality and steps that should be taken if the risk become a reality.