

**GUJARAT TECHNOLOGICAL UNIVERSITY****MCA - SEMESTER– V EXAMINATION – WINTER 2019****Subject Code: 4659303****Date: 14/11/2019****Subject Name: Software Engineering****Time: 10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

**Q.1 (a) Do as directed: 07**

- i. For black box testing, source code is mandatory required. State True or false with reason.
- ii. In alpha testing, the end users of the product are involved. State True or false with reason.
- iii. Waterfall model is best suited when \_\_\_\_\_ are known.
- iv. What are the factors to be considered when planning a software development effort?
- v. List 4P's of Project management
- vi. Define software engineering.
- vii. Draw diagram of Agile XP process.

**(b) Differentiate between prescriptive and evolutionary process model. Explain Spiral and increment model with proper diagram. 07****Q.2 (a) Attempt the following questions. 03**

- i. List any 4 principals of Agile methodology. 04
- ii. Discuss brief taxonomy of architecture styles by drawing diagram.

**(b) Draw Flow graph and cyclometric complexity for the given case: 07**

Taxi agency has certain norms for driver while hiring the Cab. Minimum fare is Rs. 50. It also cover up to 2 kilometers with no waiting. For additional 5 kilometers, Rs. 20 will be added. For every two minute waiting, Rs. 5 will be added in calculation. For night journey 50% extra will be charged.

**OR****(b) Explain in detail all the steps of requirement engineering process and discuss SRS concept giving example. 07****Q.3 (a) Answer the following questions 05**

- i. Explain Boundary Value Analysis and Equivalence classes in black box testing. 02
- ii. Explain the importance of regression testing.

- (b) Answer the following questions
- i. Discuss project planning task estimation resources. **05**
  - ii. Write rules for user interface design. **02**
- OR**
- Q.3 (a)** Write a short note on: White box testing **07**
- (b) Answer the following questions
- i. Discuss the concept of cohesion and coupling. **05**
  - ii. Explain the difference between verification and validation with example. **02**
- Q.4 (a)** Draw the use case diagram for the whatsapp application core functionality. Make your own assumptions. **07**
- (b) Prepare a scenario and write test cases for ATM System ( at least 5). **07**
- OR**
- Q.4 (a)** Draw a use case diagram for an automated teller machine (ATM), where customer uses a bank ATM to check balances of his/her bank accounts, deposit funds, withdraw cash and/or transfer funds. ATM technician provides maintenance and repairs to the ATM. Make your own assumptions. **07**
- Q.4 (b)**
- i. Draw a Context Data Flow Diagram for Online Shopping system. Make necessary assumptions for the same. **05**
  - ii. Draw Scrum Model for any system of your choice. **02**
- Q.5 (a)** Draw a class diagram for a bank system which contains data of customers (identified by name and address) and their accounts. Each account can be categorized into saving and current account. Each account has a minimum balance to be kept. Customer can withdraw certain amount as per norms of the bank. For any personal updates of customer, bank will update the details. Customer can view the summary details of his or her account. **07**
- (b) Prepare a scenario and write test cases for Library Management application ( at least 5). **07**
- OR**
- Q.5 (a)**
- i. Prepare activity diagram for registration in the system ( using swimlanes). **04**
  - ii. Write any three user stories for customer goes to mall for purchasing the glossary. **03**
- (b)
- i. Create a project charter for online shopping application. **04**
  - ii. Create a sprint backlog for user registration module **03**

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