

**VIT**

Vellore Institute of Technology

Final Assessment Test – November 2024

Course: ISWE101L - Software Engineering

Class NBR(s): 6133/6134/6135/6136/6137/6138/6139/6140/ 6141

Time: Three Hours

Max. Marks: 100

- KEEPING MOBILE PHONE/ANY ELECTRONIC GADGETS, EVEN IN 'OFF' POSITION IS TREATED AS EXAM MALPRACTICE
- DON'T WRITE ANYTHING ON THE QUESTION PAPER

Answer ALL Questions

(10 X 10 = 100 Marks)

1. Assume that you are appointed as project manager for a large banking management system whose requirements can be relatively easily identified and are stable. Identify the internal and external stakeholders of the above system suggest the most appropriate software process model for the system development. Justify your answer.
2. Develop a complete use case for one of the following activities:
 - a) Making a withdrawal at an ATM. [5]
 - b) Searching for books (on a specific topic) using an online bookstore. [5]
3. Describe a set of design principles that can be applied, regardless of the method that is used for any kind of software development.
4. Draw class diagrams for the following classes with any four attributes and two operations including visibility markers.
 - a) Receptionist class in a hotel management system. [5]
 - b) Sales Manager class in Online shopping systems. [5]
5. Consider a system that accepts a username and a password with the following criteria. Develop suitable test cases using Equivalence Class Testing Techniques.

Criteria 1: Username length should be between 7 and 13 characters. A username must include at least one uppercase letter, one lowercase letter, one special character, and one digit.

Criteria 2: Password length should be between 5 and 8 characters. Password must include the first letter should be uppercase followed by lowercase letters & digits and one special character.
6. Compare and contrast thread-based, use-based, cluster testing approaches for performing integration testing concerning object-oriented methodology.

7. Briefly discuss the notion of software metrics and software analytics. Indicate key attributes that software analytics can help developers to make decisions for large projects.
8. Elaborate on various metrics to develop the requirements models for conventional software and mobile application software.
- 9.a) Suggest the suitable steps to identify various risks and their probability of occurrence in a typical software project. Discuss each column of the risk table and its significance from the perspective of risk analysis and management of an intensive software system.

OR

- 9.b) With a neat sketch, discuss the cyclical activities involved in a typical software re-engineering process model.
- 10.a) As a Software Engineer, deliberate the implication of key process areas to be considered for achieving different Capability Maturity Model Levels in a software organization.

OR

- 10.b) Examine the technology directions recently evolved in software industry that are likely to have an influence on Software Engineering over the next decade.

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