VIT
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)
CHENNAI

| Reg. Number: | 23MCA1030 |
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# Continuous Assessment Test (CAT) – I FEBRUARY 2024

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| Programme | : | Master of Computer Applications | Semester | : | Winter 2023-24 |
| Course Code & Course Title | : | PMCA614L & Software Testing | Class Number | : | CH2023240501409 |
| Faculty | : | Dr. Renjith P N | Slot | : | G2 |
| Duration | : | 90 Minutes | Max. Mark | : | 50 |

**General Instructions:**

- Write only your registration number on the question paper in the box provided and do not write other information.

**Answer all questions**

| Q. No | Description | Marks |
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| 1 | Consider a complex software application that is critical for a financial institution. The application is currently in the initial phases of development, and the testing team is tasked with ensuring its reliability and security.<br>a) Elaborate in detail on the significance of incorporating testing activities throughout the SDLC. **[7 Marks]**<br>b) Debunk any two common myths related to software testing and explain how dispelling these myths contributes to the overall effectiveness of the testing process. **[3 Marks]** | 10 |
| 2 | Imagine you are a lead tester assigned to a project involving the development of a new e-commerce platform. The platform is expected to handle a large number of simultaneous transactions and should ensure the security of sensitive customer data. The project is currently in the testing phase, and your team is responsible for ensuring the reliability and robustness of the system.<br>a) Expound in detail on the role of each testing level in guaranteeing the success of the e-commerce platform, specifically addressing their contributions towards achieving a secure and high-performing system. **[5 Marks]**<br>b) Given the critical nature of the platform, outline a set of specific test cases that focus on performance testing. Consider scenarios that test the system's ability to handle peak loads, response times, and scalability. **[5 Marks]** | 10 |
| 3 | As a software test engineer responsible for testing a Shop Runner application, you are tasked with ensuring that the credit facility determination logic is robust and accurate. The Shop Runner extends credit facility to customers based on specific conditions, and it rejects the facility for all other customers.<br><br>The customer must satisfy at least one of the following conditions:<br><br>• Holding the present job for more than 3 years and residing in the same place for more than 5 years.<br>• Monthly salary exceeding 40,000 and holding the present job for more than 3 years. | 10 |

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| | • Residing in the same place for more than 5 years, and monthly salary exceeding 30,000.<br><br>a) Construct a Cause Effect Graph to represent the relationship between input conditions and the output decision regarding credit facility approval or rejection. **[5 Marks]**<br>b) Develop a Decision Table based on the given conditions to systematically document all possible combinations of inputs and the corresponding expected outcomes in terms of credit facility approval or rejection. **[5 Marks]** | |
| 4 | As a test manager for a university-grade calculation system, you are tasked with ensuring the accuracy and reliability of the system that calculates students' grades. The system takes into account various factors, including assignment scores, exam results, and class participation. The grades are then used to determine students' academic standing.<br><br>Identify and document critical test cases that cover various scenarios, including:<br><br>• Normal grade calculations.<br>• Boundary cases where scores are at the minimum and maximum allowed values.<br>• Cases involving different types of assignments.<br>• Situations where a student's grade is influenced by class participation. | 10 |
| 5 | You are a test engineer assigned to test the security features of an Online Banking website using State based Testing technique. The website has specific security measures in place, such as locking the system after the third attempt of entering the wrong password and locking the system after two consecutive wrong attempts with an OTP during login. The OTP has a duration of 30 seconds.<br><br>a) Construct a coherent and comprehensive diagram illustrating the various states within the login functionality. **[4 Marks]**<br>b) Enumerate and provide comprehensive explanations for the key states essential to the login process. Detail the specific attributes linked with each state, encompassing factors such as the number of login attempts, the system's lock status (either locked or unlocked), and the status of the OTP. **[6 Marks]** | 10 |

**********All the best **********