Hall Ticket No | | | | | | | | | | |

Question Paper Code: ACSC19

INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)
Dundigal-500043, Hyderabad

B.Tech V SEMESTER END EXAMINATIONS (REGULAR/ SUPPLEMENTARY) - FEBRUARY 2024
Regulation: UG20
OBJECT ORIENTED SOFTWARE ENGINEERING

Time: 3 Hours **(COMMON TO CSE | CSE (CS) | CSIT | IT)** **Max Marks: 70**

Answer ALL questions in Module I and II
Answer ONE out of two questions in Modules III, IV and V
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

MODULE – I

1. (a) Write about software engineering. Illustrate about object oriented analysis and design principle. [BL: Understand| CO: 1|Marks: 7]

   (b) Explain at least one scenario where RAD model would be applicable and not the waterfall model. [BL: Understand| CO: 1|Marks: 7]

MODULE – II

2. (a) Describe how software requirements are documented? State the importance of documentation with example. [BL: Understand| CO: 2|Marks: 7]

   (b) How effort and cost estimation are determined using cocomo model? Mention the various steps involved in risk management. [BL: Understand| CO: 2|Marks: 7]

MODULE – III

3. (a) Draw the class diagram for online order system. Explain in detail about structured analysis. [BL: Understand| CO: 3|Marks: 7]

   (b) To develop a library management system for a university, one of the requirements is to manage information about books, authors, and library patrons. To maintain a clean and modular code-base, you decide to use data abstractions. Describe how you would implement data abstractions for books, authors, and patrons in your library management system in a database form? [BL: Apply| CO: 3|Marks: 7]

4. (a) Why are control components necessary in traditional software? Explain real world applications of object-oriented analysis. [BL: Understand| CO: 4|Marks: 7]

   (b) As a part of a software development team working on a new application, the team is in the early stages of design. You have been tasked with defining the characteristics and criteria for a good design. Describe the key characteristics that a good design should possess and provide criteria to evaluate whether the design meets these characteristics. [BL: Apply| CO: 4|Marks: 7]

MODULE – IV

5. (a) Enlist any five fundamental software design concepts. Outline about object oriented analysis and design principle. [BL: Understand| CO: 5|Marks: 7]

   (b) Differentiate the concept of transform versus transaction analysis. Model a level 0 & level 1 data flow diagram for "library management system". [BL: Apply| CO: 5|Marks: 7].

6. (a) Discuss various design concepts related to software design. Summarize about designing class based components. [BL: Understand| CO: 5|Marks: 7]

   (b) As a part of a software development team working on a critical project for a large financial institution, the project involves building a new banking system. In your role, you are responsible for explaining the importance of traditional components in software development to your team. Provide examples of traditional components and explain why they are important in building robust, reliable, and maintainable software systems. [BL: Apply| CO: 5|Marks: 7]

MODULE – V

7. (a) What are the levels of testing? Elaborate about the factors that cause difficulty in testing a software. [BL: Understand| CO: 6|Marks: 7]

   (b) A developer working on a project that involves building a simple e-commerce website. You have been tasked with implementing the shopping cart functionality, including adding and removing items, calculating the total price, and applying discounts. Your manager emphasizes the importance of unit testing, and you need to ensure that your shopping cart functions are thoroughly tested. [BL: Apply| CO: 6|Marks: 7]

8. (a) Does preventive maintenance differ from adaptive maintenance? Discuss about maintenance testing with its pros and cons. [BL: Understand| CO: 6|Marks: 7]

   (b) Imagine you are the lead tester for a software project involving a critical application in the healthcare domain, which will be used for managing patient records and appointments. The application is meant to support healthcare providers, and patient safety is of utmost importance. You have a team of testers working under you. One of your team members, a junior tester, is responsible for running a series of tests on a new feature that allows doctors to prescribe medications for patients. During the testing process, the junior tester discovers a significant bug. When a doctor prescribes a certain medication, the system occasionally assigns an incorrect dosage, which could be life-threatening. How would you handle this situation, and what steps would you take to ensure patient safety and the overall success of the project?
   [BL: Apply| CO: 6|Marks: 7]

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