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

Question Paper Code: ACSC19

INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)
Dundigal-500043, Hyderabad

B.Tech VI SEMESTER END EXAMINATIONS (REGULAR) - JULY 2023
Regulation: UG-20
OBJECT ORIENTED SOFTWARE ENGINEERING

Time: 3 Hours **CSE(AI&ML)** **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) Explain how hybrid software development process models can be effectively designed and implemented to address the specific needs and challenges of complex software projects? [BL: Understand| CO: 1|Marks: 7]

   (b) You are tasked with improving the maintainability and extensibility of an existing software system. How would you apply object-oriented principles and methodologies to refactor and enhance the system? [BL: Apply| CO: 1|Marks: 7]

MODULE – II

2. (a) What is the role of risk management in software project planning, and how can it be effectively incorporated into the software development process? [BL: Understand| CO: 2|Marks: 7]

   (b) A software development project with limited historical data for accurate estimation has been assigned. How would the software estimation be approached using empirical estimation models to improve estimation accuracy and project planning? [BL: Apply| CO: 2|Marks: 7]

MODULE – III

3. (a) How does data modeling contribute to the understanding and organization of information within a system, and what are some common approaches or methodologies used in data modeling? [BL: Understand| CO: 3|Marks: 7]

   (b) Given a complex software system, how can analysis modeling techniques be utilized to identify and address potential bottlenecks or inefficiencies in the system's design? [BL: Apply| CO: 3|Marks: 7]

4. (a) Write about need for UML (Unified Modeling Language) in design modeling of object-oriented analysis, and what are some commonly used UML diagrams and notations for representing different aspects of a system's design? [BL: Understand| CO: 4|Marks: 7]

   (b) Describe how to select a specific modeling technique, such as analysis modeling or object-oriented analysis, impact of the overall development process and the resulting software solution. What are the advantages and limitations of each approach? [BL: Understand| CO: 4|Marks: 7]

MODULE – IV

5. (a) Identify and represent effectively the objects, classes, and their relationships in the object relationship model. [BL: Understand| CO: 5|Marks: 7]

   (b) When evaluating different software architectures for a given project, what criteria should be considered to select the most suitable architecture? How weigh factors such as scalability, maintainability, and integration capabilities can make an informed decision? [BL: Apply| CO: 5|Marks: 7]

6. (a) In the design process, how to balance the need for modularity and abstraction with the potential trade-offs in performance and complexity? [BL: Understand| CO: 5|Marks: 7]

   (b) Can you outline the key stages and activities involved in the design process of a software system? How do designers move from conceptualizing the system to creating detailed design specifications? [BL: Apply| CO: 5|Marks: 7]

MODULE – V

7. (a) Mention different levels of testing in the software development life cycle, and what is the purpose and scope of each level? [BL: Understand| CO: 6|Marks: 7]

   (b) Summarize about black box testing. List the different black box testing techniques to identify the errors in software components. [BL: Understand| CO: 6|Marks: 7]

8. (a) Describe the key challenges and considerations in using testing tools for software maintenance and reengineering. [BL: Understand| CO: 6|Marks: 7]

   (b) Differentiate between top-down and bottom-up approaches in software implementation and integration with suitable examples. [BL: Understand| CO: 6|Marks: 7]

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