

Hall Ticket No

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Course Code: ACSD01



# INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad - 500 043

B TECH I SEMESTER CIE-I EXAMINATIONS, NOVEMBER – 2023

Regulation: BT23

## OBJECT ORIENTED PROGRAMMING

(COMMON TO ALL BRANCHES)

Time: 2 Hours

Max Marks: 20

Answer any FOUR questions

All parts of the question must be answered in one place only

1. (a) How object oriented programming differs from object based programming language? Discuss the benefits of object oriented programming (OOP). [BL: Understand| CO: 1|Marks: 2]  
(b) Discuss the drawbacks of procedural languages and explain the need of object oriented programming with suitable program. [BL: Understand| CO: 1|Marks: 3]
2. (a) Summarize top-down and bottom-up approaches of problem solving and differentiate them. [BL: Understand| CO: 1|Marks: 2]  
(b) Explain the various forms of abstraction. How does encapsulation facilitate information hiding and data protection in object-oriented programming? [BL: Understand| CO: 1|Marks: 3]
3. (a) Discuss the different levels of access protection available in OOP. On which specifier's data, does the size of a class's object depend? [BL: Understand| CO: 2|Marks: 2]  
(b) Create a real scenario where static data members are useful with a suitable example. [BL: Understand| CO: 2|Marks: 3]
4. (a) Differentiate between class and object. What is virtual memory, and how does it extend physical memory allocation to improve system performance? [BL: Understand| CO: 2|Marks: 2]  
(b) Draw a class diagram for library management system. This diagram must describe the structure of the system by showing the system's classes, their attributes, operations (or methods), and the relationships among objects. [BL: Apply| CO: 2|Marks: 3]
5. (a) Discuss the need for constructors and destructors with an example. When do we need constructor overloading? [BL: Understand| CO: 3|Marks: 2]  
(b) How are constructors different from member functions? Explain with an example. [BL: Understand| CO: 3|Marks: 3]

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