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Question Paper Code : 40444

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2025.

Third/Fourth/Fifth Semester

Computer Science and Engineering

CS 8392 – OBJECT ORIENTED PROGRAMMING

(Common to Computer and Communication Engineering/Electrical and Electronics Engineering/Electronics and Communication Engineering/Electronics and Instrumentation Engineering/Electronics and Telecommunication Engineering/Instrumentation and Control Engineering/Artificial Intelligence and Data Science/Computer Science and Business Systems/Information Technology)

(Regulations 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. How can we create an instance of a class in java?
2. What is JVM?
3. What is meant by parameter passing constructors? Give example.
4. Differentiate class and an interface.
5. Can we override a super class method which is throwing an unchecked exception with checked exception in the sub class?
6. Write a difference between this () and super ()?
7. Give the limitations of generic programming.
8. Write the purpose of using synchronization in threads?
9. Give the steps needed to show a Frame.
10. How will you create TextArea object and TextField object?

PART B — (5 × 13 = 65 marks)

11. (a) (i) Explain in detail about the different features of Object Oriented Programming. (7)
- (ii) Give suitable example to demonstrate static keyword. (6)

Or

- (b) (i) Write a Java program to create a class called "Dog" with a name and breed attribute. Create two instances of the "Dog" class, set their attributes using the constructor and modify the attributes using the setter methods and print the updated values. (7)
- (ii) Write a Java program to create a class called "Book" with attributes for title, author, and ISBN, and methods to add and remove books from a collection. (6)
12. (a) (i) Define constructor. Describe the types of constructors supported by Java with example? (7)
- (ii) Explain any four string operations in Java. With suitable examples. (6)

Or

- (b) Write a Java program to create an interface Playable with a method play() that takes no arguments and returns void. Create three classes Football Volleyball, and Basketball that implement the Playable interface and override the play() method to play the respective sports. (13)
13. (a) Write a Java program that creates a user interface to perform integer divisions. The user enters two numbers in the text fields, Num1 and Num2. The division of Num1 and Num 2 is displayed in the Result field when the Divide button is clicked. If Num1 or Num2 were not an integer, the program would throw a Number Format Exception. If Num2 were Zero, the program would throw an Arithmetic Exception. Display the exception in a message dialog box. (13)

Or

- (b) (i) Develop a Java program to implement user defined exception handling. (6)
- (ii) Develop a Java program to transfer the content of one file to another file. (7)

14. (a) (i) Elaborate the two types of thread implementation supported by Java. Give example. (6)
- (ii) Explain the multithreading and multitasking in java. Discuss the advantages and disadvantages of Multithreading in java. (7)

Or

- (b) Write a Java program that implements a multi-thread application that has three threads. First thread generates random integer every 1 second and if the value is even, second thread computes the square of the number and prints. If the value is odd, the third thread will print the value of cube of the number. (13)
15. (a) (i) Write a Java Program to create a frame using swing in which create a push button with a label and image. When the button is clicked an image is displayed in the Frame. (7)
- (ii) Evaluate with an example program and discuss in detail about Mouse listener and Mouse Motion Listener. (6)

Or

- (b) (i) Compare and contrast the AWT and swing components with suitable example. (6)
- (ii) Describe in detail about working with 2D shapes in Java with an example program. (7)

PART C — (1 × 15 = 15 marks)

16. (a) Build a Java application for the users to login into a web application. If the user doesn't have the credentials to login, facilitate with a new user registration page. (15)

Or

- (b) Write a Java program that creates a class hierarchy for employees of a company. The base class should be Employee, with subclasses Manager Developer, and Programmer. Each subclass should have properties such as name, address, salary, and job title. Implement methods for calculating bonuses, generating performance reports and managing projects. (15)

