

PARUL INSTITUTE OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
SUBJECT: OBJECT ORIENTED PROGRAMMING WITH JAVA
SUBJECT CODE: 303105205

QUESTION BANK

Q1. Multiple Choice Questions:

1. Which of the following is NOT a primitive data type in Java?
 - a. int
 - b. double
 - c. string
 - d. char

2. What is the size of the char data type in Java?
 - a. 4 bytes
 - b. 2 bytes
 - c. 8 bytes
 - d. 1 byte

3. Which operator is used for assigning a value to a variable in Java?
 - a. =
 - b. ==
 - c. ===
 - d. :=

4. What is the result of the expression `10 % 3` in Java?
 - a. 1
 - b. 3
 - c. 0
 - d. 10

5. In Java, the if-else statement is used for:
 - a. Looping
 - b. Exception handling
 - c. Decision-making
 - d. Multithreading

6. How many times will the following for loop iterate?
- ```
for (int i = 0; i <= 5; i++) {
 // Code block
}
```
- a. 4 times
  - b. 5 times
  - c. 6 times
  - d. 7 times
7. What is the correct way to declare and initialize a 2D array in Java?
- a. `int[] arr = {1, 2, 3; 4, 5, 6; 7, 8, 9};`
  - b. `int[][] arr = {{1, 2, 3}, {4, 5, 6}, {7, 8, 9}};`
  - c. `int[3][3] arr = {1, 2, 3, 4, 5, 6, 7, 8, 9};`
  - d. `int[3][3] arr = [[1, 2, 3], [4, 5, 6], [7, 8, 9]];`
8. To access the second element of an array named `nums`, the correct syntax is:
- a. `nums[2]`
  - b. `nums(1)`
  - c. `nums{2}`
  - d. `nums.at(2)`

**Q2. Answer the following:**

- Q1. What is bytecode? Explain how to use the JDK tools needed to compile and run java programs on the terminal.
- Q2. Are 'goto' and 'exit' keywords in java? List any 10 keywords in java.
- Q3. What is JVM and its functions? What is JIT and its role in the program execution?
- Q4. Explain the 5 logical operators in java.
- Q5. Is the 'char' data type in java signed or unsigned? Java has 4 different data types for storing integers. Name them along with their size and range.
- Q6. An ATM can dispense notes of ₹500, ₹200 and ₹100. Assuming the

amount is in multiples of 100, write a program to find the number of notes of each denomination to dispense the amount. Ensure at least one note of ₹100 is dispensed.

- Q7. Explain how to use break and continue with labels.
- Q8. What is a switch? Explain with an example. Which data types does switch support?
- Q9. Write a program to input 'n' and find the sum of the following series:  $1 + 2^2 + 3^3 + 4^4 + \dots + n^n$
- Q10. What are the different ways to initialize an array? Explain with examples.
- Q11. Explain the System.arraycopy method with an example.
- Q12. A saddle point of a matrix is an element of that matrix which is the minimum element of that row and a maximum element of that column. Write a program to input an integer matrix using a 2D array and find its saddle point.
- Q13. What is super? Explain the different ways of using super in a java program.
- Q14. Explain static binding and dynamic binding in java.
- Q15. Define a class Publication with title, author and price as fields, a constructor with parameters, accessors (getters) and a toString method. Define a class Book that inherits Publication with pageCount as field, a constructor with parameters, an accessor and a toString method. Define a class Album that inherits Publication with songLength as field, a constructor with parameters, an accessor and a toString method. Define a main class to create a Book and an Album and display them.