

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)

CLASS: BTECH
BRANCH: CSE/IT

SEMESTER: III
SESSION: MO/2022

SUBJECT: CS233 OBJECT ORIENTED PROGRAMMING & DESIGN PATTERNS

TIME: 2 HOURS

FULL MARKS: 25

INSTRUCTIONS:

1. The total marks of the questions are 25.
2. Candidates attempt for all 25 marks.
3. Before attempting the question paper, be sure that you have got the correct question paper.
4. The missing data, if any, may be assumed suitably.
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

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|--|-----|----|--|----|
| Q1 (a) In context to Java, what is the importance of setting environment variables? | [2] | 1 | | 4 |
| Q1 (b) Can we return multiple values from a method? Explain with suitable examples. | [3] | 2 | | 2 |
| Q2 (a) Correct errors (if any) and predict the output of the following code: | [2] | 2 | | 3 |
| <pre> class Test { public static void main(String args[]) { int x= 2; int y = 0; for(; y<10; ++y) { if(y % x ==0) continue; else if(y == 8) break; else System.out.println(y + " "); } } } </pre> | | | | |
| Q2 (b) How an application comprising of multiple classes can be compiled? Illustrate with a suitable program. | [3] | 2 | | 3 |
| Q3 (a) How multidimensional arrays are declared? Can you have uneven (irregular) multidimensional arrays? Explain with a suitable example. | [2] | 1 | | 1 |
| Q3 (b) Differentiate between local variables, class variables and instance variables of a class with a suitable program segment. | [3] | 2 | | 4 |
| Q4 (a) Explain the significance of the bytecode. | [2] | 1 | | 1 |
| Q4 (b) What is mutable and immutable object? Explain each with an example. | [3] | 1 | | 2 |
| Q5 Write a program to read a line of text from the user. All the words that begin with a vowel are capitalized and all the words that begin with a consonant are prefixed with @ and appended with #. (Eg: the line "Today is Sunday" would become "@Today# IS @Sunday#") | [5] | 2 | | 6 |