

## MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

Paper Code: BCAE-602B

# OBJECT ORIENTED PROGRAMMING WITH JAVA

Time Allotted: 3 Hours

Full Marks: 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

## GROUP - A ( Multiple Choice Type Questions )

	( Multiple Choice Ty)	he Ar	lestions )
1. Ch	oose the correct alterna	tives	for any ten of the
	owing:		$10 \times 1 = 10$
-i)	Which of the following	may	be part of a class
1)	definition ?	,	•
	a) Instance variables	b)	Instance methods
	c) Constructors	d)	All of these.
įii)	How many Default Const	tructo	ors can a class have
	a) One	b)	Two
	c) More than two	d)	None of these.
iii)	An exception is		
(	a) a run time error	b)	a compile time error
	c) a syntactical error	d)	none of these.
iv)	Full form of JVM is		
	a) Java Visual Machine	e	
	b) Java Virtual Machin	ie	
c) Java Variable Management			
	d) Name of those	3	

## CS/BCA/EVEN/SEM-6/BCAE-602B/2018-19

Consider the following program: import java.io.\*; public class TestClass{ public static void main (String[] args) { // Method Body What should be the name of the program? あ) TestClass.java TestClass.class d) None of these. c) TestClass.obj Consider the following statements: int a=5, b=6; int y=(a < b)? (b --): (a --); What should be the value of y after the execution of the above statements? b) 6 a) c) Compile time error d) Run time error. vii) JRE stands for Java Runtime Environment Java Resource Environment b) c) Java Runtime Entity None of these. d) viii) What invokes a thread's run() method? JVM invokes the thread's run() method when the thread is initially executed Main application running the thread b) start() method of the thread class c) None of these. d) When does the finally block get executed? ix) Always when try block get executed, no matter a) exception occurred or not Only when exception occurs in try block code. b) Always when a method get executed, no matter c) exception occured or not Always when a try block get executed, if d)

exception do not occur.

- Which class cannot be initialized? (X) Abstract Public Protected. d) Which of the following is not supported in Java? xi) Multilevel Inheritance Multiple Inheritance b) Hierarchical Inheritance None of these. Consider the following code segment: class Test { int x = 10: public static void main (String[] args) { Test t = new Test(); System.out.println(t.x);
  - What should be the output of the above code?
  - a) 10

- b) 0
- c) Run time error
- d) None of these.

#### GROUP - B

### ( Short Answer Type Questions )

Answer any three of the following.  $3 \times 5 = 15$ 

- 2. Discuss the features of Java with respect to object oriented programming. What is 'byte code'?

  4 + 1
- 3. Give difference between overloading and overriding of methods in Java. State the use of 'super' keyword. 4 + 1
- 4. Differentiate between final, finally and finalize in Java.
  - 5. How multilevel inheritance is done in Java? Show with example and show calling sequence of constructors.

3+2

6. Why main function is declared as static? What do you mean by abstract class and abstract method? 1+4

#### GROUP - C

#### ( Long Answer Type Questions )

Answer any three of the following.  $3 \times 15 = 45$ 

7. a) What is a package? Explain the different access controls for packages in Java.

b) What is Unicode? Explain the advantage of using Unicode.

c) Explain operators with reference to Java. Explain two dimensional array with example.

(2+3)+2+(3+5)

a) Briefly explain the Applet life cycle.

b) What are the main differences between Java application & Java applet?

- c) Write an applet program where you may input two numbers and get the result of the product of those two numbers.

  6 + 4 + 5
- 9. a) Explain the concept of JVM.

b) Explain abstraction of object-oriented programming.

c) Write a program in Java to check whether a number (taken as user input) is an Armstrong number or not.

5 + 5 + 5

10. a) What is the difference method overloading and method overriding?

b) Write a program in Java to print the Fibonacci series up to the limit taken as user input.

c) Write a program in Java to input a number and check whether it is a perfect number or not.

5 + 5 + 5

- 11. Write short notes on any three of the following: 3 x 5
  - a) Abstract class
  - b) OOP principles
    - c) Interface
  - d) ByteCode
  - e) Method Overriding.