

NAME OF STUDENT: .....

MAX. MARKS: 100

DATE: .....

TIME: 2 HOURS

NOTE: You will not be allowed to write during the first 15 minutes. This time is to be spent in reading the question paper. The time given at the head of this paper is the time allowed for writing the answers.

This paper is divided into two Sections.

Attempt all questions from Section A and any four questions from Section B.

The intended marks for questions or parts of questions are given in brackets [ ].

SECTION A

(Attempt all questions from this Section.)

Question 1:

[20]

Choose the correct answers to the questions from the given options.

(Do not copy the question, write the correct answers only.)

- (i) \_\_\_\_\_ is the ability of a function or an object to acquire multiple forms.  
(a) Interface (b) Instance  
(c) Encapsulation (d) Polymorphism
- (ii) \_\_\_\_\_ is the java concept that is implemented through a super class and a sub class.  
(a) Abstraction (b) encapsulation  
(c) Inheritance (d) Polymorphism
- (iii) The process of finding and eliminating errors is called \_\_\_\_\_.  
(a) Bugging (b) Mugging  
(c) Debugging (d) Removing debugs
- (iv) Machine language for JVM is called \_\_\_\_\_.  
(a) Source Code (b) Byte Code  
(c) Program Code (d) Mnemonic code
- (v) The terms object and \_\_\_\_\_ are often interchangeable.  
(a) Attribute (b) Instance  
(c) Behaviour (d) State
- (vi) A class is \_\_\_\_\_.  
(a) An object factory (b) A specification for objects  
(c) A blueprint to create objects (d) All of these
- (vii) \_\_\_\_\_ is a character literal.  
(a) "A" (b) "a"  
(c) 'A' (d) All of these
- (viii) \_\_\_\_\_ are used to name different parts of a program such as variables, methods, classes, objects etc.  
(a) Operators (b) Attributes  
(c) Identifiers (d) Literals



- (ix) ASCII stands for \_\_\_\_\_.
- (a) American Simulated Code for Information Interchange
  - (b) American Standard Code for Information Interchange
  - (c) American Standard Code for Interchange of Information
  - (d) American Standard Code for interaction of Information
- (x) Default value of \_\_\_\_\_ data type is '\u0000'.
- (a) char
  - (b) character
  - (c) String
  - (d) text
- (xi) The statement  $i=i+1$  is equivalent to \_\_\_\_\_.
- (a)  $i++$
  - (b)  $i+=1$
  - (c)  $++i$
  - (d) All of these
- (xii) For  $x=5$ , the statement  $sum = ++x + 8$  evaluates to
- (a)  $sum = 13$
  - (b)  $sum = 15$
  - (c)  $sum = 14$
  - (d)  $sum = 16$
- (xiii) The expression  $13 \% 3$  gives the output
- (a) 4
  - (b) 2
  - (c) 3
  - (d) 1
- (xiv) The statement `System.out.println("six " + 3 + 3);` gives the output
- (a) six 33
  - (b) six 6
  - (c) 33 six
  - (d) 6 six
- (xv) The statement  $(1 > 0) \ || \ (1 < 0)$  evaluates to
- (a) 1
  - (b) 0
  - (c) true
  - (d) false
- (xvi) The statement  $(1 == 1) ? 1 : 0$  evaluates to
- (a) 0
  - (b) 1
  - (c) false
  - (d) true
- (xvii) Single line comment can be added using \_\_\_\_\_.
- (a) //
  - (b) /\* \*/
  - (c) \\  
\\
  - (d) Both A and B
- (xviii) Error occurs in a program when \_\_\_\_\_.
- (a) Syntax of the programming language is not followed
  - (b) The program does not run properly or does not execute at all
  - (c) The program produces an incorrect result
  - (d) All of the above
- (xix) Default delimiter used in the Scanner class is \_\_\_\_\_
- (a) Comma
  - (b) Colon
  - (c) Whitespace
  - (d) There is no default delimiter
- (xx) Which package would you import for the Scanner class?
- (a) `java.util.*`
  - (b) `java.io.*`
  - (c) `java.awt.*`
  - (d) `java.lang.*`

**Question 2:**

- (i) Define Abstraction. [2]
- (ii) Distinguish between ".java" file and ".class" file. [2]
- (iii) Name any four features of Java. [2]
- (iv) What does a class encapsulate? [2]
- (v) Name any two primitive data types and write number of bytes occupied by them. [2]
- (vi) What is the result of evaluating the following expression?  
 $(2+2*2)/2+2$  [2]

- (vii) Which of the following are keywords?  
class, input, final, bool, constant, public, args, static [2]
- (viii) What will be the output of the following code?  
int k=5, j=9;  
k+=k++ - ++j + k;  
System.out.println("k="+k);  
System.out.println("j="+j); [2]
- (ix) Write the java expression for  $\frac{a^2+b^2}{a^2-b^2}$  [2]
- (x) Name the method of Scanner class that:  
(a) checks if the Scanner has another token in its input  
(b) checks if the Scanner has another line in its input [2]

### SECTION B

(Answer **any four** questions from this Section.)

The answers in this section should consist of the programs in either BlueJ environment or any program environment with java as the base.

Each program should be written using variable description / mnemonic codes so that the logic of the program is clearly depicted.

Flowcharts and algorithms are not required.

Buffered Reader / Data Input Stream should not be used in the programs.

**Question 3:** [15]

Write a program by using class 'Employee' to accept Basic Pay of an employee. Calculate the allowances / deductions as given below:

Allowance / Deduction	Rate
Dearness Allowance (DA)	30% of Basic Pay
House Rent Allowance (HRA)	15% of Basic Pay
Provident Fund (PF)	12.5% of Basic Pay

Finally, find and print the Gross and Net pay.

Gross Pay = Basic Pay + Dearness Allowance + House Rent Allowance

Net Pay = Gross Pay - Provident Fund

**Question 4:** [15]

A shopkeeper offers 10% discount on the printed price of a Digital Camera. However, a customer has to pay 6% GST on the remaining amount. Write a program in Java to calculate the amount to be paid by the customer taking printed price as an input.

**Question 5:** [15]

A person is paid ₹35/- for each day he works and fined ₹30/- for each day he remains absent. Write a program to calculate and display his monthly income if he is present for 25 days and remain absent for 5 days.

**Question 6:****[15]**

Write a program to input two unequal numbers. Display the numbers after swapping their values in the variables using a third variable.

Sample Input: a = 23, b = 56

Sample Output: a = 56, b = 23

**Question 7:****[15]**

Write a program in java to input the temperature in Celsius, convert it into Fahrenheit and display the value in the terminal window. A sample output is given below:

Enter temperature in Celsius: 80

80.0 degree Celsius = 176.0 degree Fahrenheit

[Hint: Fahrenheit =  $(9.0/5) * \text{Celsius} + 32$ ]

**Question 8:****[15]**

Write a program to input two unequal numbers then find out the greater and smaller number using ternary operator.

Sample Input: a = 45, b = 87

Sample Output: Greater number = 87, Smaller number= 45

----- END -----