

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 (40 Marks)

(Attempt **all** questions from this **Section**.)

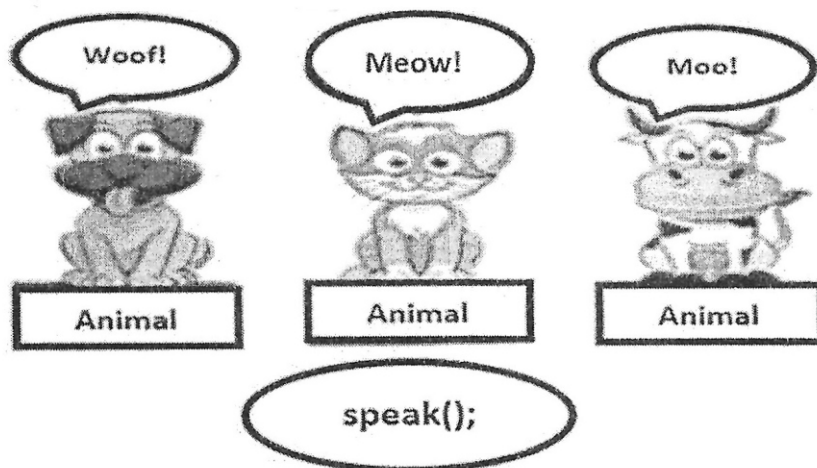
Question 1

[20]

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

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

(i)



Name the Java feature depicted in the above picture.

- | | |
|-------------------|------------------|
| (a) Encapsulation | (b) Abstraction |
| (c) Inheritance | (d) Polymorphism |
- (ii) Which of the following is the size of boolean datatype in Java?
- | | |
|-------------|-------------|
| (a) 1 bit | (b) 8 bits |
| (c) 8 bytes | (d) 16 bits |
- (iii) Which of the following is a legal identifier?
- | | |
|------------------|--------------|
| (a) Student age | (b) 9thclass |
| (c) Total-Amount | (d) Class9th |
- (iv) The expression $4 + 10 \% 3$ evaluates to _____.
- | | |
|-------|-------|
| (a) 7 | (b) 5 |
| (c) 1 | (d) 4 |

- (v) Which of the following is a valid comment?
 (a) `comment //` (b) `/comment`
 (c) `*/comment */` (d) `/*comment */`
- (vi) The Bytecode files are generated with the _____ extension.
 (a) `.java` (b) `.exe`
 (c) `.class` (d) `.jvm`
- (vii) _____ is a template to create similar objects that share common characteristics and behaviour.
 (a) A function (b) An attribute
 (c) A procedure (d) A class
- (viii) **Assertion (A):** Value of a variable cannot be fixed.
Reason(R): Variable's value can be fixed by using final keyword.
 (a) Both Assertion (A) and Reason (R) are true and reason (R) is a correct explanation of Assertion (A)
 (b) Both Assertion (A) and Reason (R) are true and reason (R) is not a correct explanation of Assertion (A)
 (c) Assertion (A) is true and reason (R) is false
 (d) Assertion (A) is false and reason (R) is true
- (ix) JRE stands for _____.
 (a) Java Runtime Editor (b) Java Runtime Expression
 (c) Java Runtime Environment (d) Java Runtime Enabler
- (x) An object belonging to a particular class is known as a / an _____ of that class.
 (a) Interface (b) Instance
 (c) Alias (d) Member
- (xi) Which package would you import to display the date and time?
 (a) `java.io` (b) `java.lang`
 (c) `java.util` (d) `java.sys`
- (xii) Which of the following is not a character literal?
 (a) `'\t'` (b) `'t'`
 (c) `"t"` (d) `'5'`
- (xiii) Which of the following is a keyword?
 (a) `character` (b) `object`
 (c) `break` (d) `attribute`
- (xiv) The statement `(1 != 1)?1:0` evaluates to
 (a) `0` (b) `1`
 (c) `false` (d) `true`
- (xv) The statement `System.out.println("four"+2+2);` gives the output
 (a) `four22` (b) `22four`
 (c) `four4` (d) `4four`
- (xvii) Java uses _____ for execution.
 (a) Compiler and interpreter (b) Compiler only
 (c) Interpreter only (d) Assembler
- (xviii) Which one of the following is not a valid operator in Java?
 (a) `>=` (b) `==`
 (c) `!=` (d) `!==`

- (xix) Which clause is optional in the switch statement?
 (a) switch (b) case
 (c) break (d) default
- (xx) Which operator cannot be used with if-else statement?
 (a) <= (b) &&
 (c) || (d) ?:

Question 2

- (i) Write the output for the following:
 System.out.print("All the");
 System.out.println("best \n Good luck"); [2]
- (ii) Write the following as java expressions:
 i. $(a+b)^2 + b$
 ii. $z = \frac{ab+bc+ca}{3abc}$ [2]
- (iii) Give the output of the following expression:
 a+ = a++ + ++a + --a + a--; when a = 9 [2]
- (iv) Arrange the following primitive data types in the ascending order of their size:
 i. char ii. byte
 iii. double iv. int [2]
- (v) Name the types of casting shown by the following examples:
 i. char c = (char)99;
 ii. int x = 'g'; [2]
- (vi) Rewrite the following program segment using if else:
 comm = (sale > 5000) ? sale*10/100 : 0; [2]
- (vii) What will be the output of the following code snippet?
 char x = 'B';
 int y = (x == 'B') ? 'b' : 'B';
 System.out.println("y = " + y); [2]
- (viii) Identify the literals listed below:
 i. 0.7 ii. 'M'
 iii. false iv. "n" [2]
- (ix) Write the java statement to create an object 'sifra' of class 'Robot'. [2]
- (x) What are the default values of the following type of variables:
 int, long, double and char [2]

SECTION B (60 Marks)

(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.

Question 3

[15]

A cloth showroom has announced the following festival discounts on the purchase of items based on the total cost of the items purchased:

Total Cost	Discount Rate
Less than ₹1000	5%
₹1001 to ₹2000	10%
₹2001 to ₹5000	15%
Above ₹5000	20%

Write a program to input the total cost and to compute and display the amount to be paid by the customer after availing the discount.

Question 4

[15]

Write a program in Java to input the temperature in Fahrenheit, convert it into Celsius and display the output.

Formula: Celsius = $(5.0/9) * (\text{Fahrenheit} - 32)$

Sample Output:

Enter the temperature in Fahrenheit

104

104.0 degree Fahrenheit = 40.0 degree Celsius

Question 5

[15]

Write a program in Java to determine if an entered character is in uppercase or lowercase.

Question 6

[15]

A box of chocolates can hold 30 chocolates, and a container can hold 100 boxes of chocolates. Write a program that prompts the user to enter the total number of chocolates. The program then outputs the number of boxes and the number of containers required to ship the chocolates.

Question 7

[15]

Write a program in Java to determine if an entered number is a Buzz Number or not.

Hint: A Buzz Number is the number which either ends with 7 or is divisible by 7.

Question 8

[15]

Using the switch statement in Java, write a program to display the colour of the spectrum (VIBGYOR) according to the user's choice.

----- END -----

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experience
with
programming
shapes how
you see it
forever”**

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