FINAL EXAMINATION: 2024-2025

CLASS: IX D, E, F, G

SUBJECT: COMPUTER APPLICATIONS

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**.)

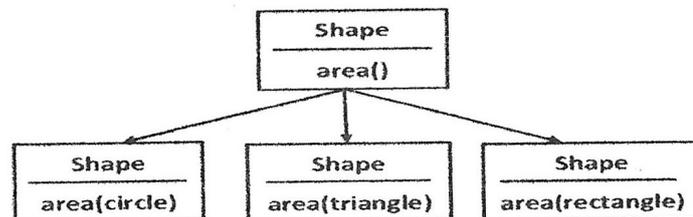**Question 1:**   [20]

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

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

(i)

Name the java feature depicted in the above picture.

(a) Inheritance   (b) Abstraction
(c) Encapsulation   (d) Polymorphism

(ii) _____ represents an entity in the real-world with its identity and behaviour.

(a) A class   (b) A procedure
(c) An object   (d) A function

(iii) Which of the following is <u>not</u> a keyword?

(a) short   (b) long
(c) single   (d) double

(iv) Which of the following is not a legal identifier?

(a) _age   (b) 9thclass
(c) $Amount   (d) nullValue

(v) The expression 10 % 3 evaluates to _____.

(a) 3   (b) 0
(c) 1   (d) 4

(vi) Which of the following is a valid comment?

(a) comment //   (b) /comment
(c) */comment */   (d) /*comment */

(vii) Which type of error occurs when there is a division by a variable that contains a value zero?

    (a) Logical error   (b) Runtime error

    (c) Syntax error   (d) Compile-time error

(viii) _____ keyword is used to include a package or class in a program.

    (a) include   (b) this

    (c) public   (d) import

(ix) **Assertion (A):** Abstraction is the process of exposing the implementation details of an object.
Reason(R): Abstraction allows you to focus on what an object does rather than how it does it. It helps in managing complexity.

    (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

(x) Which of the following loop executes at least once?

    (a) for   (b) while

    (c) do while   (d) repeat

(xi) Which of the following is not a jump statement in Java?

    (a) jump   (b) return

    (c) break   (d) continue

(xii) Which Java package includes the Math class?

    (a) java.io   (b) java.lang

    (c) java.util   (d) java.sys

(xiii) Give the output of Math.floor(46.6)

    (a) 46.5   (b) -46.0

    (c) 47.0   (d) 46.0

(xiv) Math.random() returns a double value r such that

    (a) $0.0 \leq r < 1.0$ (b) $0.0 < r \leq 1.0$

    (c) $0.0 \leq r \leq 1.0$ (d) $0.0 < r < 1.0$

(xv) Identifiers are used to name _____.

    (a) Variables   (b) Classes

    (c) Methods   (d) All of these

(xvi) Which of the following is not a token?

    (a) Keywords   (b) Operators

    (c) Identifiers   (d) Procedures

(xvii) Java uses _____for execution.

    (a) Compiler and interpreter   (b) Compiler only

    (c) Interpreter only   (d) Assembler

(xviii) Java applications can run on _____.

    (a) Windows platform   (b) Macintosh platform

    (c) Unix platform   (d) All of these

(xix) The unsolicited emails and attractive advertisements are collectively known as_____.

    (a) Spam   (b) Hacking

    (c) Virus   (d) Patent

(xx) Which of the following is not a form of software piracy?

    (a) Softlifting   (b) Counterfeiting

    (c) Hard Disk Loading   (d) Encrypting

Question 2:

(i) Write valid java statements for the following:
  i. Print the absolute value of -9.99
  ii. Print the cube root of -125   **[2]**

(ii) Write the following as java expressions:
  i. $\frac{\pi}{6}(z^4 - 2\pi)$
  ii. $\sqrt[3]{z^2 - 2\pi}$ **[2]**

(iii) Determine the values of variable x and y.
  int a=63, b=36;
  boolean x = (a>b) ? true : false;
  int y = (a<b) ? a : b;   **[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 operators listed below:

i. <	ii. ++
iii. &&	iv. ?:

[2]

(vi) Rewrite the following program segment using if else:
  comm = (sale > 15000) ? sale*5/100 : 0;   **[2]**

(vii) Analyse the following program segment and determine how many times the loop will be executed and what will be the output of the program segment:
```
int p=200;
while(true)
{
if(p<100)
break;
p=p-20;
}
System.out.print(p);
```
[2]

(viii) How many times is the println statement executed?
```
for(int i=1; i<=5; i++)
for(int j=1; j<=5; j++)
if(i==j)
System.out.println(i*j);
```
[2]

(ix) Write the java statement to create an object mp4 of class Digital.   **[2]**

(x) Write any two netiquettes that you need to follow when using a social networking site.   **[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]

Mayur Transport Company charges for parcels as per the following tariff:

Weight	Charges
Upto 10 Kg.	₹30 per Kg.
For the next 20 Kg.	₹20 per Kg.
Above 30 Kg.	₹15 per Kg.

Write a program in java to calculate the charge for a parcel, taking the weight of the parcel as an input.

Question 4: [15]

Write a program that will display the Fibonacci series between 1 and 100.

[Hint: Fibonacci series is a series of numbers in which each number is the sum of the two preceding numbers. For example- 0, 1, 1, 2, 3, 5, 8 and so on.]

Question 5: [15]

Write a program to accept a number and check and display whether it is a spy number or not.

[A number is spy if the sum of its digits equals the product of the digits.]

Example: Consider the number, 1124. Sum of the digits = 1 + 1 + 2 + 4 = 8.

Product of the digits = 1 * 1 * 2 * 4 = 8.

Question 6: [15]

Write a program to compute the sum of all the factors of an integer. Read the number using the Scanner class.

Question 7: [15]

Using the switch statement, write a menu driven program to accept a number and check and display whether it is a Prime Number or not OR a Buzz Number or not.

  i. A Prime Number is the number which is divisible only by 1 and itself and not by any other number. Example: 3, 5, 7, 11 etc.
  ii. A Buzz Number is the number which either ends with 7 or is divisible by 7.

Question 8: [15]

Write a menu driven program to display the pattern as per user's choice:

Pattern 1	Pattern 2
*	1 2 3 4 5
* *	2 3 4 5
* * *	3 4 5
* * * *	4 5
* * * * *	5

----- END -----

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