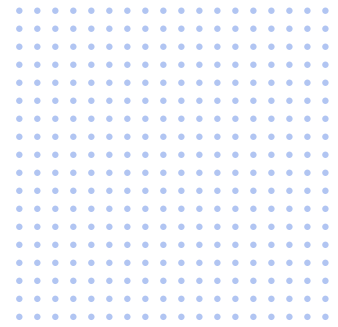




FOR ICSE CLASS 9 EXAM PREPARATION

ICSE Class 9 2027 Sample Paper - Computer Applications

EXAM

ICSE Class 9

YEAR

2027

TYPE

Sample Paper

SUBJECT

Computer Applications

INCLUDES

Marking Scheme



CLASS IX - SPECIMEN QUESTION PAPER

COMPUTER APPLICATIONS

Maximum Marks: 100

Time allowed: Two hours

1. Answers to this Paper must be written on the paper provided separately.
2. You will **not** be allowed to write during the first 15 minutes.
3. This time is to be spent in reading the question paper.
4. The time given at the head of this Paper is the time allowed for writing the answers.

5. This Paper is divided into **two** Sections.
6. Attempt **all** questions from **Section A** and **any four** questions from **Section B**.
7. The intended marks for questions or parts of questions are given in brackets[].

Instruction for the Supervising Examiner

Kindly read aloud the Instructions given above to all the candidates present in the Examination Hall.

SECTION A (40 Marks)

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

Question 1

- (i) Choose the correct answers to the questions from the given options. [15]

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

1. Megha knows how to bake cookies in the microwave oven, but she does not know about the internal, unseen components of the microwave oven. Identify the **OOPs feature** depicted in this scenario.



- (a) Abstraction
 - (b) Polymorphism
 - (c) Inheritance
 - (d) Modularity
2. Which Math method accepts a double argument and returns an Integer?
- (a) ceil
 - (b) floor
 - (c) random
 - (d) round

3. Match the *operators* in Column A to the *type of operators* in Column B:

Column A	Column B
1. +	(a) Logical
2. >	(b) Mathematical
3. &&	(c) Relational

- (a) 1-(a), 2-(b), 3-(c)
- (b) 1-(b), 2-(c), 3-(a)
- (c) 1-(c), 2-(a), 3-(b)
- (d) 1-(b), 2-(a), 3-(c)
4. Which of the following cannot be used as an identifier in **Java**?
- (a) calculate
- (b) switch
- (c) age
- (d) grade
5. Which of the following is the correct order of the number of bytes occupied by int, char, double and boolean?
- (a) 2, 8, 4, 1
- (b) 4, 8, 1, 2
- (c) 2, 1, 4, 8
- (d) 4, 2, 8, 1

6. What does the escape sequence `\t` represent in **Java**?
- (a) alert bell
 - (b) tab space
 - (c) form feed
 - (d) carriage return
7. The output of the Java statement ***Math.addExact(7, 9);*** is _____.
- (a) 15
 - (b) 16
 - (c) 17
 - (d) 18
8. Find the **ODD** one out of the following:
- int, double, Scanner, char**
- (a) int
 - (b) char
 - (c) Scanner
 - (d) double
9. What is the purpose of the ***if-else-if-else*** ladder?
- (a) iteration
 - (b) to check for one condition only
 - (c) to check multiple conditions sequentially
 - (d) to declare a variable

10. Evaluate the given expression and identify the result $3*5\%7+8/3*9$;
- (a) 15
 - (b) 19
 - (c) 18
 - (d) 19.0
11. Roy wanted to buy the latest mobile phone. He approached a service provider to get a sim card with a 10-digit mobile number. What is the Scanner class method to accept the mobile number?
- (a) ***Sc.next()***
 - (b) ***Sc.nextInt()***
 - (c) ***Sc.nextLong()***
 - (d) ***Sc.next().charAt(0)***
12. The character equivalent of the **ASCII code 65** is 'a'. State **true** or **false**.
- (a) True
 - (b) False
13. Fill in the blank to complete the following Java statement:
- Scanner SC = _____ Scanner(System.in);***
- (a) Scanner
 - (b) dot
 - (c) class
 - (d) new

14. Which of the following does **NOT** execute even once?

- (a) `for(k=10;k<=1;k++)`
- (b) `for(k=100;k>=10;k-=10)`
- (c) `for(k=1;k<=10;k++)`
- (d) `for(k=10;k<=10;k++)`

15. What is the value stored in z:

`z *= z++ + ++z;` where `z = 2`

- (a) 6
- (b) 4
- (c) 12
- (d) 10

(ii) **Answer the following questions:**

[5]

- (a) Name the type of error which occurs while compiling a program.
- (b) Which Java package is imported by default?
- (c) Define an *object* in Java.
- (d) What is the full form of JDK?
- (e) What is the Math method to convert – 4 to 4?

Question 2

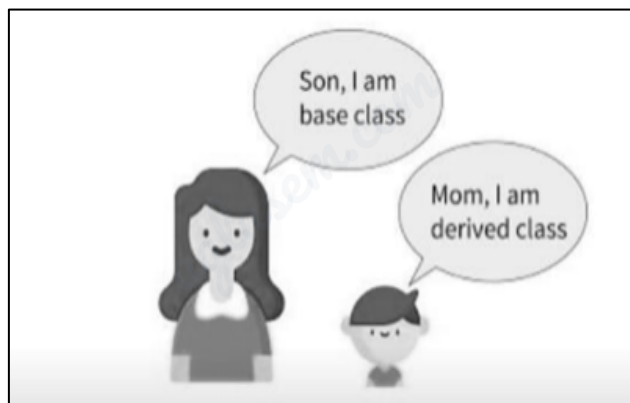
- (i) Write the **Java expression** for the following: [2]

$$\frac{mn + |m|}{m + n}$$

- (ii) Evaluate the following expression: [2]

13*7%6+8/5*7;

- (iii) (a) Raj climbs 5 floors by climbing 14 steps to reach each floor. Name the programming concept that can be used to depict the same. [2]
- (b) Identify the **Object-Oriented Programming** concept implemented in the picture given below:



- (iv) Differentiate between = and ==. [2]
- (v) Rose wrote the following code to check whether a number is an even number or not, and print an appropriate message: [2]

```
if(n%2==0)
    System.out.println("even Number");
else
    System.out.println("Not an even number");
```

She asked Raj to rewrite the code using the ternary operators. What would be the code written by Raj?

- (vi) What is the value of **ch**? [2]

int x = 65;

char ch=(char) (x++ + 5);

- (vii) The following program prints the sum of factors of a given number. Fill in the blanks with appropriate Java statements: [2]

Example: if number is 6, then output: 12 [1 + 2 + 3 + 6]

void sumfact(int n)

{

int i, _____; (1)

for(i=1;i<=n;i++)

{

if(_____) (2)

s=s+i;

}

System.out.println("Sum of factors = "+s);

}

- (viii) Given below is the program segment [2]

if(a%b==0)

System.out.println(a/b);

else

System.out.println(a%b);

Write the output of the program segment when:

(a) $a = 50, b = 5$

(b) $a = 50, b = 7$

- (ix) Give the output of the following program segment: [2]

for(k=7;k<13;k+=6)

System.out.println(k*2);

System.out.println(k*3);

- (x) How many times is the following loop executed? Write the output of the same. [2]

```
for(k=15;k>5;k-=5);
System.out.println(k);
```

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 laptop company gives a discount to its customers based on the number of laptops purchased. If the number of laptops is more than three, the customers get a discount of 10% on the total cost, otherwise the discount is zero.

Define a class “laptop” to accept the name of the company [**String**], name of the customer [**String**], number of laptops [**int**], and the price of each laptop [**double**] from the user using Scanner class methods only.

Calculate the discount [**double**] and the amount to be paid [**double**] by the customer.

Discount = number of laptops × price × 10 %

Amount to be paid by the customer = number of laptops × price - discount

Print all the details.

Question 4

- (i) Define a class “sumseries” to calculate and display the sum of the series: [12]

$$S = a^2 + a^4 + a^6 + a^8 + \dots + a^n$$

- (ii) Name the jump statements in Java. [3]

Question 5

- (i) Define a class “pattern” to print the following format using nested for loop only. [12]

1*2*3*4*5*

1*2*3*4*5*

1*2*3*4*5*

1*2*3*4*5*

- (ii) Name *three* iteration statements in Java. [3]

Question 6

In a hill station, the bikes are given for rent on an hourly basis as follows: [15]

Number of hours	Rate
Upto 2 hours	Rs.150 per hour
For Next 2 hours (each additional hour)	Rs.100 per hour
For above 4 hours (each additional hour)	Rs.75 per hour

Define a class “bike” to accept the name of the customer and number of hours he would like to hire the bike, calculate and display the amount to be paid by him as:

Dear <name of the customer>

You need to pay <amount> for <number of hours> hours.

Question 7

- (i) Define a class “roman” to display the corresponding Roman numeral of a Hindu Arabic number (1 to 5) accepted from the user. The program should be designed using switch case construct only. [12]
- (ii) What are *relational operators* in Java? Name *any two* types of relational operators. [3]

Question 8

Write a menu-driven program to calculate the area of an equilateral triangle and a scalene triangle as per the user’s choice (using switch case only). [15]

- (i) Scalene triangle area $= \sqrt{s(s-a)(s-b)(s-c)}$ where ***a, b, c*** are the sides and $s = \frac{a+b+c}{2}$.
- (ii) Equilateral triangle ***area*** $= \frac{\sqrt{3}}{4} a^2$, ***a=side of the triangle***



CLASS IX – SPECIMEN

DRAFT MARKING SCHEME - COMPUTER APPLICATIONS

SECTION A (40 marks)

Question 1		[15x1]
(i)	1. (a) Abstraction	
	2. (d) round	
	3. (b) 1-(b), 2-(c), 3-(a)	
	4. (b) switch	
	5. (d) 4, 2, 8, 1	
	6. (b) tab space	
	7. (b) 16	
	8. (c) Scanner	
	9. (c) to check multiple conditions sequentially	
	10. (b) 19	
	11. (c) Sc.nextLong()	
	12. (b) False	
	13. (d) new	
	14. (a) for(k=10;k<=1;k++)	
	15. (c) 12	
(ii)	(a) Syntax (b) lang (c) An object is an instance of a class. (d) Java Development Kit (e) Math.abs	[5x1]
Question 2		
(i)	$(m*n+Math.abs(m))/(m+n)$	[2]
(ii)	8	[2]
(iii)	(a) Nested loop (b) Inheritance	[2]
(iv)	= is an assignment operator, == is a relational operator	[2]
(v)	String s = n%2==0? "Even number": "Not an even number";	[2]
(vi)	F	[2]



(vii)	1. s=0; 2 n%i==0	[2]
(viii)	(a) 10 (b) 1	[2]
(ix)	14 39	[2]
(x)	Loop is executed twice Output : 5	[2]

SECTION B (60 Marks)

Question 3

class laptop	→[1]	[15]
{		
public void main(String com,String name, int n,double p)	→[4]	
{ double total =0.0;	→[1]	
if(n>=3)	→[2]	
{		
double dis =n*p*10.0/100;	→[2]	
total =n*p-dis;	→[1]	
}		
else		
{		
total =n*p;	→[1]	
}		
System.out.println(name+" purchased "+com+ " laptops of " +n+ " numbers and the bill is "		
+total);	→[1]	
}		
}		
Variable Description	→[2]	

Question 4

(i)	class sumseries	→[1]	[12]
	{		
	void calculate(int a, int n)	→[2]	
	{		
	double s=0,i;	→[1]	
	for(i=2;i<=n;i+=2)	→[3]	
	{		



	<pre>s+=Math.pow(a,i);</pre> <pre>}</pre> <pre>System.out.println(s);</pre> <pre>}</pre> <pre>}</pre>	<pre>→[2]</pre> <pre>→[1]</pre> <pre>→[2]</pre>	
(ii)	break, continue, return		[3]
Question 5			
(i)	<pre>class pattern</pre> <pre>{</pre> <pre>void print()</pre> <pre>{</pre> <pre>int r,c;</pre> <pre>for(r=1;r<=4;r++)</pre> <pre>{</pre> <pre>for(c=1;c<=5;c++)</pre> <pre>{</pre> <pre>System.out.print(c+"*");</pre> <pre>}</pre> <pre>System.out.println();</pre> <pre>}</pre> <pre>}</pre>	<pre>→[1]</pre> <pre>→[1]</pre> <pre>→[3]</pre> <pre>→[2]</pre> <pre>→[2]</pre> <pre>→[1]</pre> <pre>→[2]</pre>	[12]
(ii)	for, while and do while		[3]
Question 6			
	<pre>class bike</pre> <pre>{</pre> <pre>void calculate(String name, int n)</pre> <pre>{</pre> <pre>double bill;</pre> <pre>if(n<=2)</pre> <pre>bill=n*150;</pre> <pre>else</pre> <pre>if(n>2&& n<=4)</pre> <pre>bill=150*2+(n-2)*100;</pre> <pre>else</pre> <pre>bill=150*2+100*2+(n-4)*75;</pre>	<pre>→[1]</pre> <pre>→[2]</pre> <pre>→[1]</pre> <pre>→[1]</pre> <pre>→[1]</pre> <pre>→[1]</pre> <pre>→[2]</pre> <pre>→[2]</pre>	[15]



<pre> System.out.println("Dear "+name+" you need to pay Rs."+bill+ " for "+n+" hours"); } } Variable Description </pre>		→[2]	
Question 7			
(i)	<pre> class roman { void display(int n) { switch (n) { case 1 : System.out.println("I");break; case 2 : System.out.println("II");break; case 3 : System.out.println("III");break; case 4 : System.out.println("IV");break; case 5 : System.out.println("V");break; default : System.out.println("Invalid number"); } } } Variable Description </pre>	→[1] →[1] →[2] →[1] →[1] →[1] →[1] →[1] →[1] →[2]	[12]
(ii)	The relational operators are used for comparison of two values. They are >, <, >=, <=, !=, =.		[3]
Question 8			
	<pre> import java.util.*; class menu { Scanner ob=new Scanner(System.in); void perform() { int ch; System.out.println("1.Area of a Scalene triangle\n2.Area of Equilateral triangle\n"); System.out.println("Enter your choice"); ch=ob.nextInt(); switch(ch) { </pre>	→[1] →[1] →[1] →[1] →[1]	[15]

<pre>case 1: double a,b,c,S,A; System.out.println("Enter a"); a=ob.nextDouble(); System.out.println("Enter b"); b=ob.nextDouble(); System.out.println("Enter c"); c=ob.nextDouble(); S=(a+b+c)/2; A=Math.sqrt(S*(S-a)*(S-b)*(S-c)); System.out.println("Area of a Scalene triangle="+A); break;</pre>	} →[1]
<pre>case 2: double n,m; System.out.println("Enter a"); n=ob.nextDouble(); m=Math.sqrt(3)*n*n/4; System.out.println("Area of an equilateral triangle="+m); break;</pre>	→[1] →[1]
<pre>default : System.out.println("Invalid choice");</pre>	→[1]
<pre>} }</pre>	
Variable Description	→[2]