

Q1. Give the definition (1-2 Lines) and an example (wherever applicable) of the following terms:

Object	Abstraction	Encapsulation
Class	Byte code	JVM
Applet	Inheritance	Polymorphism
Interface	Class "Object"	Object code
Casting	Recursion	WORA
IDE	Compiler	Interpreter
API	IDE	Type casting
Suffix	Precision loss err	Coercion
Object Factory	Immutable	Compound statement

- Q2. Name the two main types of comments in Java?  
 Q3. What are tokens? Name their 5 types with e.g.  
 Q4. Give any 5 escape sequences.  
 Q5. Give ascii codes for the upper & lower case alphabets and digits.  
 Q6. Show primitive types with their size and range.  
 Q7. How can we declare a variable whose value cannot be changed?  
 Q8. On what does the shift and bitwise operators work in Java? Show the TT for Exclusive OR (^).  
 Q9. Give the value (with reason) that the variable on the left hand side will hold/display  
 $\text{float } a = (\text{float})(21/2); \quad \text{int } b = 5 * 3/4 + 4/3 + 6;$   
 $\text{int } c = 100 + 10 > 10 ? 10 : 20; \quad \text{float } d = '1' + '2'; \quad \text{int } e = 20 \% 7 / 2 * 3;$   
 Q10. How are the following different (i) & from && (ii) = from == (iii) >> from >>>?  
 Q11. Define Precedence and Associativity?  
 Q12. Prepare a table for operator Precedence & Associativity.  
 Q13. What are the three types of operators (based on operands)?  
 Q14. Show the output of the following program  

```
int x=5, y=0;
System.out.println(x++*2);
System.out.println(++x*2);
y=x++ + ++x + x++ + ++x;
System.out.println(y);
x+=x++ + ++x;
System.out.println(x);
Sop(x-- + " " + --x + " " + --x + " " + x--);
System.out.println("Sum =" + 5 + 10);
System.out.println('A' + 5);
```

 Q15. Show the output with reason.  

```
int i=1;
for( ; i<=5; i+=2);
System.out.println(i);
```

 Q16. Show one example each of Infinity and NaN.  
 Q17. What is the difference between the rint() and the round().  
 Q18. Explain the use with Syntax/Differentiate.

if-else	switch	?:
for	while	do-while

- Q19. Display "Red" if a variable *code* holds 'R', "Green" if 'G', "Blue" if 'B' or "undefined" for any other character, using all the selection constructs.  
 Q20. Express using all the three iteration constructs.  
 $F=1$   
 $\text{FOR } I=1 \text{ TO } 5$   
 $\quad F=F*I$   
 $\text{ENDFOR}$   
 $\text{PRINT } F$   
 Q21. Rewrite in Java  
 (a)  $\sin(c) + \frac{1}{2} \times \sqrt{a^2 + 5b}$   
 (b)  $\lfloor a \rfloor + \max\{b, c\} \div \log_e c$   
 Q22. Name the three programming constructs?  
 Q23. Compare if and ?:.  
 Q24. Compare if and switch?  
 Q25. What is fall-through and how to prevent?  
 Q26. Name the elements that control a loop.  
 Q27. What are entry and exit controlled loops?  
 Q28. Differentiate between the three types of loops.  
 Q29. Differentiate between [labeled] *break* and *continue*.  
 Q30. Differentiate between a counter, flag and a control variable?-.  
 Q31. Define and call any example function & label

Prototype	signature/formal args	access specifier
modifier	return type	actual args
declaration	Definition	extended name

- Q32. Write an example program showing the difference between call by value and reference?  
 Q33. What is the difference between call by value and reference and what decides it?  
 Q34. What is the difference between pure and impure functions?  
 Q35. What is function overloading? What things should be kept in mind while overloading a function? Show an example.  
 Q36. Write the prototype for a function which  
 (a) Accepts a character and returns its ascii code.  
 (b) Accepts the name and age and returns an EMI amount.  
 (c) Write a single statement to find display the length of the last name of a name store in *n*.  
 Q37. What is a constructor? Can it be overloaded?  
 Q38. What are default values? To which variables are they given?  
 Q39. Name and give an example of the types of constructors.  
 Q40. Show how is a parameterized constructor is passed values.  
 Q41. When will you need to use "this" keyword inside a constructor?  
 Q41. (b) Differentiate between Constructors & Methods.  
 Q42. Define an object of a class QUAD which invokes a parameterized constructor which accepts two double values.  
 Q43. What are temporary instances? Show an example.  
 Q44. What is a destructor?  
 Q45. Define (i) Composite and (ii) User defined data types.  
 Q46. How is the size of a composite data type determined?  
 Q47. Give 3 differences between composite and primitive data types.  
 Q48. Mark (i) Declaration (ii) Instantiation and (iii) Initialization in:  
 $A \text{ obj} = \text{new } A(5,7);$   
 Q49. What is meant by Null Reference?  
 Q50. How can we access methods and variables of a class outside it.  
 Q51. What are access specifiers? Chart all the access specifiers and their accessibility in the class/subclasses in same & other packages.  
 Q52. What are static variables/methods? What's their other name.  
 Q53. Define a Stream? Differentiate between a byte oriented and a character oriented stream.  
 Q54. Name the three types of errors.  
 Q55. What is exception-handling? what is its advantage? Show the keywords used for it in an example.  
 Q56. Name some predefined exceptions in Java?  
 Q57. What are wrapper classes and their advantage? Comment on their names. Give some e.g. functions?  
 Q58. How is a String different from *StringBuffer*? Name a few *StringBuffer* functions too. (ii) When is a *StringTokenizer* useful?  
 Q59. Differentiate between the .equals() and .compareTo() functions.  
 Q60. What do you understand by chaining of calls? Show an eg.  
 Q61. What is a package? Name some predefined packages in Java.  
 Q62. Which package is imported by default? Name some classes inside this package.  
 Q63. Show an example of creating and another of using a user defined package.  
 Q64. Differentiate between Scanner and BufferedReader class input.  
 Q65. What are PrintWriter classes used for?  
 Q66. Differentiate between scope and visibility.  
 Q67. Define "Inheritance" with an example? Name its 5 types.  
 Q68. What are base and derived classes? What's their other name.  
 Q69. What is an abstract class?  
 Q70. What is an Array?  
 Q71. What are (i) out of bound subscripts (ii) Initializer list.  
 Q72. Differentiate the two searching and sorting methods with a working example.  
 Q73. Initialize an array to store 5, -12, 100, -99999 and 0L. How many bytes will it occupy?  
 Q74. Write a statement that creates an array to store 10 objects of a class called "Shape".  
 Q75. (intentionally left blank)

Other related papers –  
 (a) **Outputs** (loops and conditions)  
 (b) **Functions** [END]