Uttarakhand Technical University Computer Science paper

1.
(a) Java is both a programming language and a platform. Comment.
(b) what is polymorphism? How does function overloading implement polymorphism?
(c) a _____ constructor create objects through values passed to it.
(d) where can the following members of a class be accessed: private, public protected?
(e) what is an Exception?
[2+2+1+3+2 = 10]

2.
(a) what is a compound statement? Support with an example.
(b) State one similarity and one difference between while and do while loop.
(c) What is the significance of default clause in a switch statement?
(d) What is the function of operators? What are binary operators?
(e) What is meant by 'floating constant' in java?
[2+2+2+2+2 = 10]

3.
(a) enter any 2 variables through constructor parameters and write a program to swap and print the values.
(b) What is 'call by value' and 'call by reference'?
(c) Differentiate between if and switch statements.
(d) What is a 'package'? give an example.
[4+2+2+2 = 10]

4.
(a) mention any two different styles of expressing a comment in a program.
(b) State the difference between a constructor and a method.
(c) Write a loop that displays numbers 2,4,6,8,..............18,20.
(d) Write an equivalent while loop for the following for loop:
For (int i=2, sum=0; i<=20; i=i+2)
Sum+ = i; [2+2+3+3 = 10]

SECTION B (60 Marks)

Attempt any four questions from this section. Write all the programs in Java BlueJ environment and clearly explain the steps using the mnemonics and comments wherever required.

1. Write a program to initialize an array of 5 names and initialize another array with their respective phone numbers. Search for a name input by the user, in the list. If found, display "Search Successful" and print the name along with the phone number, otherwise display "Name not enlisted. Try other names". [15]

2. Write a program to find the sum of the series; $S = 1 + x + x2 + ... + xn$. [15]

3. Write a program that doubles every element of an array A [4] [4]. [15]

4. Write a class with name employee and basic as its data member, to find the gross pay of an employee for the following allowances and deduction. Use meaningful variables. [15]

5. Write a program to generate all Armstrong numbers between 100 and 500. An Armstrong number is one which is equal to the cubes of each of its digits. E.g. 153 = 13 + 53 + 33. [15]