

Tribhuvan University
Institute of Science and Technology
 2065
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Bachelor Level/ First Year/ First Semester/ Science
Computer Science and Information Technology (CSc. 102)
 (Fundamental of Computer Programming)

Full Marks: 60
 Pass Marks: 24
 Time: 3 hours.

*Candidates are required to give their answers in their own words as far as practicable.
 All questions carry equal marks.*

Attempt all questions.

1. Draw the flow chart for finding largest of three numbers and write an algorithm and explain it.
2. Find the value of “a” in each of the following statements:
 int i = 3, j = 4, k = 8;
 float a = 4.5, b = 6.5, c = 3.5;
 - a) $a = b - i/k + c/k$
 - b) $a = (b - k)/j + (j + c)/k$
 - c) $a = c - ((i + j)/(k + i)) * b$
 - d) $a = c - i + j/k + i * b$
 - e) $a = c + j \% 2 + b$
 - f) $a = (b + 1) \% (c + 1)$
3. Write a program for the interest charged in installments for following case. A cassette player costs Rs. 2000. A shopkeeper sells it for Rs. 100 down payment and Rs. 100 for 21 more months. What is the monthly interest charged?
4. Write a program that uses a “for” loop to compute and prints the sum of a given numbers of squares.
5. Write a program to obtain the product of the following matrices and explain it:

$$A = \begin{bmatrix} 3 & 5 & 7 \\ 2 & -3 & 4 \\ 4 & 5 & 2 \end{bmatrix} \quad B = \begin{bmatrix} 7 & 6 \\ 6 & -5 \\ 4 & 3 \end{bmatrix}$$
6. Write a function to add, subtract, multiply and divide two complex numbers (x + iy) and (c + id).
7. Write a program which will read a line and delete from it all occurrences of the word “that”.
8. What is pointer and explain its applications? Write a program that uses pointers to copy an array of double.

OR

Define a pointer. Write a function that is passed an array of n pointers to the maximum of the n floats.

9. Define a structure of employee having data members name, address, age and salary. Take data for n employee in an array dynamically and find the average salary.
10. Given a text file, create another text file deleting the following words “three”, “bad” and “time”.

OR

Why do you require graphical function? Explain the basic graphical function with suitable program.