

TRIBHUVAN UNIVERSITY  
INSTITUTE OF ENGINEERING  
**Examination Control Division**  
2078 Bhadra

| Exam.       | Regular        |            |        |
|-------------|----------------|------------|--------|
| Level       | BE             | Full Marks | 80     |
| Programme   | ALL except BAR | Pass Marks | 32     |
| Year / Part | I / I          | Time       | 3 hrs. |

**Subject: - Computer Programming (CT 401)**

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ Attempt All questions.
- ✓ The figures in the margin indicate Full Marks.
- ✓ Assume suitable data if necessary.

1. a) What is a program? Explain different types of programming language in brief. [1+3]  
 b) What is an algorithm? Explain how does algorithm and flowchart helps in computer programming. [1+3]
2. a) Explain Ternary operator in C with an example. Define following terms. [2+2]  
 (i) Preprocessor directives (ii) Keywords  
 b) Write the output of the following C program. [4]  

```
int a,b;
double c = 123.55667788
char str[] = "I enjoy programming";
scanf("%3d%2d", &a, &b);
printf("a = %5\n b=%-7d",a,b);
printf("\n%10.7s",str);
printf("\n%0.3f",c);
printf("\n%-10.6f",c);
```

input:123456      789
3. Write the difference between formatted I/O and unformatted I/O functions in C-programming. Write the syntax for following functions. [2+4]  
 (i) getch() (ii) getchar() (iii) scanf()
4. a) What do you mean by iteration? Explain the operation of break and continue statement with a suitable example. [1+3]  
 b) Write a C program to check whether an entered word is a palindrome or not without using library function. [6]
5. a) What do you mean by a function header? Explain the function parameters and its types. [1+3]  
 b) Write a C program to calculate the sum of digits of a given number unless the sum becomes a single digit using recursion. [Hint: 9785 => 29 => 11 => 2] [4]
6. a) What is an array? Why is it necessary in c programming? [1+2]  
 b) Write a program which display following pattern. [5]  

```
H
HE
HEL
HELL
HELLO
HELL
HEL
HE
H
```

7. Is there any relation between array and pointer? If yes, show the relation between array and pointer with a suitable example. [1+3]
8. What is structure? Write a program to read a structure named "Faculty" having StaffID, Name, Address and ServiceYear as member. Where ServiceYear is another structure having DurationInYear as member. Now display the details of those faculties whose service duration is more than 10 and less than 30 years. [1+7]
9. a) Why do we need file handling? Write different modes of file opening. [1+3]  
b) What is the purpose of fseek and write a program to write the name, roll no, and age of five students into a disk file name "STUDENT.DAT". [6]
10. Describe X format and T format in FORTRAN. Differentiate between unconditional goto and computed goto in FORTRAN. Write a program in FORTRAN to sort elements of a ID array in ascending as well as descending order. [2+2+6]

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