

POKHARA UNIVERSITY

Level: Bachelor
Programme: BE
Course: Programming in C

Semester: Fall

Year : 2022
Full Marks: 100
Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

1. a) What is software? Explain various types of software in brief. 7
- b) Write an algorithm and draw a flowchart to check whether a number given by the user is divisible by 2 and 3. 8
2. a) Why the C language is called a middle-level language? What are the benefits of C being a middle-level language? Explain in Detail. 7
- b) What are the different branching statements in C? Create a menu-driven program having the following options: 8
 - i. Sum of three numbers.
 - ii. Sum of squares of those three numbers.
 - iii. Mean of those three numbers.
3. a) How does a for-loop work? Explain in brief. Also write a program to print the following series up to four terms: 1, 4, 9, 16, ... 7
- b) Why do you need arrays? Write a program to read a matrix of order $m \times n$ and print its transpose matrix. 8
4. a) What are the advantages of using a function? Write a program to find the area of a circle using a function that takes radius of a circle as an argument and returns the area to the calling function. 8
- b) What are pointer variables? Write a program to find the sum of elements of an integer array using pointer (not the index of the array). 7

OR

Explain about the different types of dynamic memory allocation techniques used in C.

5. a) Define a recursive function. Write a program to find the sum of numbers from 1 to 50 using recursive function. 8

OR

Write a program to check whether the number is prime or not using user defined function.

- b) What are character arrays in C? Write a program to print the following pattern. 7

ENGINEER
ENGINEE
ENGINE
ENGIN
ENGI
ENG
EN
E

6. a) Create a nested structure for the following data. 8

Emp_id	Emp_name	Department	Address	Date of birth
				mm dd yyyy

Write a program to initialize details for 10 employees and display the details of employees from "POKHARA".

- b) What are the different file opening modes? Write a program to read name and marks of n number of students and store them in a file. 7
7. Write short notes on: (Any two) 2×5
 - a) Formatted input/ output functions
 - b) Storage classes
 - c) Union