

(c) Write a program to add two matrices A and B having dimension  $3 \times 3$  and store the result in another matrix.

5. (a) What do you mean by storage classes? Discuss different types of storage classes used in C with suitable example.

(b) Write a program in C to check whether an entered string is a palindrome or not.

(c) Write a program in C to copy the contents of one file into another file.

6. (a) Discuss the significance of operator precedence and associativity in detail.

(b) Write a program in C to simulate a simple calculator using switch case statement.

(c) What do you mean by macros? Explain different types of macros with suitable example.

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Following Paper ID and Roll No. to be filled in your Answer Book.

PAPER ID : 43201 Roll No. 1 2 3 0 4 3 9 3 6 0

## B. Tech Examination 2023-24

### (Odd Semester)

#### COMPUTER CONCEPTS & PROGRAMMING IN C

Time : Three Hours]

[Maximum Marks : 60]

Note :— Attempt all questions.

### SECTION-A

1. Attempt all parts of the following :  $1 \times 8 = 8$

(a) What are the various characteristics of an algorithm?

(b) Write differences between compiler and interpreter.

(c) What is an enumerated data type in C language?

(d) Differentiate between structure and union.

- (e) Distinguish between actual arguments and formal arguments.
- (f) List various file opening modes in C.
- (g) Differentiate between system software and application software.
- (h) What will be value of d if d is an integer after the operation  $d=2/7.0$ ?

### SECTION - B

2. Attempt any two parts of the following.  $6 \times 2 = 12$

- (a) Draw the functional block diagram of a digital computer and discuss its components in brief.
- (b) What are the different types of bitwise operators used in C? Give an example of each.
- (c) Write a program in C to find the factorial of a given integer using recursion.
- (d) What do you mean by pointers in C? How are they declared? Write a program in C to swap the values of two variables by using pointers.

### SECTION - C

3. Attempt any two parts from each question. Each part carry equal marks.  $8 \times 5 = 40$

- (a) Define data types in C. Discuss primitive data types in terms of memory occupied, format specifier and range.
- (b) What do you mean by dynamic memory allocation? Explain the malloc () and Calloc () function in details.
- (c) Write a program in C to print the following pattern.

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- 4. (a) What is an operating system? Explain various types of function performed by an operating system.
- (b) Explain call by value and call by reference mechanism for function call using proper example.