## 12. Structures, Union and Enumeration

## CO4: Develop and execute applications using structures and Unions

- 1. Create user-defined data type equivalent to int. Declare three variables of its type. Perform arithmetic operations using these variables.
- 2. Define a structure called **student** with roll number, name and mark as data members. Write a C program initialize the values for 2 students and print the same.
- 3. Define a structure called **employee** with employee's details like name, employee id, salary etc. Write a C program to read the data for employee and print the same.
- 4. Define a structure called **personal** with Name, gender, date of birth and salary as data members. Here, **date of birth should be structure** with day, month and year as data members. Write a C program to read the above information and print the same.
- 5. Define a structure **salary** with the following information

Name

Department

Basic\_pay

Nested structure: Allowance

Dearness

House\_rent

City

Using **salary** structure, declare an employee array with 5 elements and write a program to read the information and calculate the gross pay (basic + all three allowances) and display the output.

6. Create a structure to store the following information of an employee.

Employee's number, name, pay and date of joining.

It is decided to increase the pay as per the following rules.

Pay<=Rs.2000 :15% increase Pay<=Rs.5000 but >Rs.2000 :10% increase Pay > Rs.5000 : no increase

Write a C program using a function.

- 7. Define a structure that describes the set of books in a library. For each book, the members are name of author, publisher, and rate and branch information. Write a function to print a list of books supplied by a publisher.
- 8. Define a union called **class** with the following information

Number

Name

Department

Using union **class**, declare a student array with 5 elements and write a program to read the information and print the same.

9. Write a program to create enumerated data type for 12 months. Initialize the first identifier with 1. Display their name of the month using this enumerated data type.