

PURBANCHAL UNIVERSITY
2017

Bachelor in Information Technology (B.I.T.)/First Semester/Final

Time: 03:00 hrs.

Full Marks: 80 / Pass Marks: 32

BIT175CO: Computer Programming in C (New Course)

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

Figure in the margin indicate full marks.

Group A

Answer TWO questions.

$2 \times 12 = 24$

- 1(a) What are the different rules for naming variables? Write an Algorithm and flowchart to find the greatest number among three numbers. 3+4
- (b) Write a program to generate Fibonacci series upto N terms. 5
- 2(a) Why do we need to store data into the file? Write a program to draw a Right Angle Triangle and set the line color as RED. 2+4
- (b) Define pointer with syntax. Write a program, using pointer, to find transpose of a given matrix. 1+5
- 3(a) Discuss structure with syntax. 2
- (b) Write a program using structure to read Name, Age, Address and Telephone number of N persons and sort them in ascending order by Name and display all the person's detail whose age is greater than 25. 10

Group B

Answer SEVEN questions.

$7 \times 8 = 56$

4. What is operator? List different types of operators supported in C. Explain in detail the basic Structure of 'C' programming. 1+2+5
5. Write a program to input average marks of student and show the grade as the following conditions. 8

Marks	Grade
0-39	F
40-49	D

6. Differentiate between call by value and call by reference. Write a program to swap two variables showing the example of call by reference. 4+4
7. Write a program to determine whether the given number is palindrome or not. 8
8. Explain primary data types. Discuss unformatted input functions. 4+4
9. Discuss memory management functions. Write a program to find the sum of elements of a given array, using DMA. 3+5
- 10 Define and list the different types of Array with syntax. Write a program to the following pattern: 3+5

1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
1 2 3 4 5 6

11. Write short notes on any TWO: 4+4
- (a) String handling functions
 - (b) Difference between Structure and Array
 - (c) Opening Modes of File



PURBANCHAL UNIVERSITY
2011

Bachelor in Information Technology (B.I.T.)/First Semester/Back

Time: 03:00 hrs.

Full Marks: 80 / Pass Marks: 32

BIT116CS: Computer Programming-I

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

Figure in the margin indicate full marks.

Group A

Answer TWO questions.

$2 \times 12 = 24$

- 1(a) Explain call by value and call by reference with example. 6
- (b) Write a program to generate Fibonacci series upto N terms using functions. 6
- 2(a) How will you use pointer with structure? Explain with example. 6
- (b) Write a program using pointer to find transpose of a given square matrix. 6
- 3(a) Discuss nested structure with an example. 6
- (b) Differentiate structure and union. 3
- (c) Write a program to input records of N books and display those records in alphabetical order on the basis of book name. Book id, name and price are data members of structures. 6

Group B

Answer EIGHT questions.

$8 \times 7 = 56$

- 4. Discuss C tokens. 7
- 5. Write an algorithm and flowchart to find reverse of a given number. 7
- 6. Write a program to generate following patterns: 7

1

1 2 1

1 2 3 2 1

1 2 3 4 3 2 1

1 2 3 4 5 4 3 2 1

Contd.

(2)

7. Discuss advantages of data file. Write a program to copy content of one file into another file. 2+5
8. Discuss increment and decrement operator with example. Write program to swap given two variables. 3+4
9. Write a program to draw the following figures without overlap:
(a) an ellipse 3.5
(b) two concentric circles 3.5
10. Define looping. Differentiate entry controlled loop and exit controlled loop with flowchart. 2+5
11. Discuss the importance of C programming language. Differentiate compiler and interpreter. 4+3
12. Write a program to determine whether the given string is palindrome or not, without using strrev () function. 7
13. Write short notes on any TWO;
(a) Logical operator
(b) Recursion
(c) DMA 3.5+3.5

PURBANCHAL UNIVERSITY**2012****Bachelor in Information Technology (B.I.T.)/First Semester/Final****Time: 03:00 hrs.****Full Marks: 80 /Pass Marks: 32****BIT175CO: Computer Programming in C**

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

Figure in the margin indicate full marks

Group A **$2 \times 12 = 24$** **Answer TWO questions.**

- 1(a) What are the advantages of using function? Discuss local and global variables with example. 2+3
- (b) Write a program to determine whether the given number is palindrome or not using function. 7
- 2(a) Discuss chain of pointer with example. Why do we require DMA? Explain. 2+3
- (b) Write a program to count number of vowels and constants in a given sentence using pointer. 7
- 3(a) How does an array differ from a structure? 3
- (b) Discuss the importance of data file. 3
- (c) Write a program to count number of characters, words, and new lines present in a file. 6

Group B **$8 \times 7 = 56$** **Answer EIGHT questions.**

4. Define data type. Discuss fundamental data type. 1+6
5. Write a program to multiply given two matrices. 7
6. Define preprocessor directive. Differentiate compiler and interpreter. 2+5
7. Define ternary operator, increment, and sizeof () operator with example. 7

Contd....

(2)

3.5+3.5

8. Write a program to draw:
(a) three concentric circles
(b) a right-angled triangle
9. Write a program to solve a quadratic equation, considering all possible cases.
10. Write a program using structure to read the following information of 100 students:
- Student name, student Roll Number and marks count of 100.
The program should print the name, roll number of students who have obtained more than 60 marks.
11. Explain memory management functions with example.
12. Define Escape Sequence. Write a program to swap content of two variables using function and pointer.
13. Write short notes on any TWO:
(a) Unconditional control statements
(b) Unformatted I/O functions
(c) Bitwise operators.

2x3.5

PURBANCHAL UNIVERSITY**2013 (New)**

Bachelor in Information Technology (B.I.T.)/First Semester/Final

Time: 03:00 hrs.

Full Marks: 80 /Pass Marks: 32

BIT175C0: Computer Programming in C

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

Figure in the margin indicate full marks.

Group A**Answer TWO questions.** **$2 \times 12 = 24$**

- 1(a) Define recursion. Differentiate local and global variables. 2+3
- (b) Write a program to compute nC_r using function. 7
- 2(a) Define a pointer. Why is it used? Discuss. 2+3
- (b) Write a program to find the smallest and largest numbers in a given array using pointer. 7
- 3(a) Differentiate an array and a structure. 3
- (b) How nested structure is defined and initialized? Explain with an example. 3
- (c) Write a program, using structure, to input records of 10 students. Members include name, roll number, and marks obtained in math, C program and English Display the records of students who have passed in C programming. 6

Group B**Answer SEVEN questions.** **$7 \times 8 = 56$**

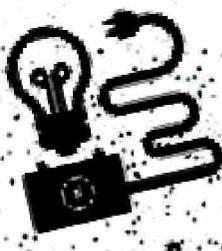
4. Write an algorithm, flowchart, and program to determine in which quadrant a given point lies. 2+2+4
5. Describe break and continue with examples. Write a program to generate the following output: 4+4

S

Contd. ...

(2)

7. Discuss advantages of data file. Write a program to copy content of one file into another file. 2+5
8. Discuss increment and decrement operator with example. Write program to swap given two variables. 3+4
9. Write a program to draw the following figures without overlap:
 (a) an ellipse 3.5
 (b) two concentric circles 3.5
10. Define looping. Differentiate entry controlled loop and exit controlled loop with flowchart. 2+5
11. Discuss the importance of C programming language. Differentiate compiler and interpreter. 4+3
12. Write a program to determine whether the given string is palindrome or not, without using strrev () function. 7
13. Write short notes on any TWO:
 (a) Logical operator
 (b) Recursion
 (c) DMA 3.5+3.5



Unstopable Safar
 Follow Your Imaginations...

PURBANCHAL UNIVERSITY**2014 (New)****Bachelor in Information Technology (B.I.T.)/First Semester/Final****Time: 03:00 hrs.****Full Marks: 80 /Pass Marks: 32****BIT175CO: Computer Programming in C**

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

Figure in the margin indicate full marks.

Group A**Answer TWO questions.** **$2 \times 12 = 24$**

1. Explain the difference between structure and union. Define a structure data type called time-struct containing three members integer hour, integer minute and integer second. Develop a program that would assign values to the individual members and display the time in the form: 16:40:51.
2. How can you pass pointers to a function? Write a program to illustrate the difference between ordinary arguments, which are passed by value, and pointer arguments, which are passed by reference.
3. Illustrate arrays and its types with example. Write a program to read a list of 'n' numbers and sort them in increasing order.

 $5 + 7 = 12$ **$4 + 8 = 12$** **Group B****Answer SEVEN questions.** **$7 \times 8 = 56$**

- 4/ Differentiate between local and global variables. Write a program to find the largest of three integer quantities using function.
5. Write a program to multiply two $m \times n$ matrices.
6. Write a program to generate Pascal's triangle.

 $3 + 5$ **8**

```

      1
     1 2 1
    1 2 3 2 1
   1 2 3 4 3 2 1
  
```

Contd. ...

(2)

7. List out the different types of operators. Illustrate bitwise operator with example. $3+5=8$
8. Write a program to print the following series:
1, 1, 2, 3, 5, 8, 13, 21,
9. Illustrate I/O operation with example. Write a program to read and write a line of text and convert to Uppercase. $4+4=8$
10. Explain opening and closing of file in C. Write a program to draw square, ellipse using graphics function. $4+4=8$
11. Write a program to print prime numbers between 1 and 20.
11. Write short notes on (any TWO):
 (a) Algorithm and flowchart
 (b) Data files
 (c) Dynamic memory allocation $4+4=8$



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Follow Your Imaginations...

PURBANCHAL UNIVERSITY

2015

**Bachelor in Information Technology (B.I.T.)/First Semester/Final
Time: 03:00 hrs.**

Full Marks: 80 /Pass Marks: 32

BIT175CO: Computer Programming in C (New Course)

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

Figure in the margin indicate full marks.

Group A

Answer TWO questions.

$2 \times 12 = 24$

1. Write a program to input 10 employee records (Emp_id, Emp_name, and Emp_salary) and store them in a data file named "Emp.dat". Display the employee information who gets highest salary. 12
2. What is a function? Elaborate the differences between user-defined and library functions. Contrast and explain with suitable examples, the difference between iteration and recursion. $2+4+6$
3. Describe pointers and arrays. WAP to take n numbers and display the sum of even numbers and odd numbers separately. $2+2+8$

Group B

Answer SEVEN questions.

$7 \times 8 = 56$

4. Discuss the differences between Local, Global and Static variables with suitable examples. 8
- 5(a) What do you mean by variables and keywords? Give examples. 3
- (b) Explain the use of ternary operator with example. 5
6. WAP to perform matrix multiplication using array and pointers. 8
7. Explain in detail about memory management in C. 8
8. Write a C program to display:
 - (a) a rectangle whose height is 200 pixels and width is 400 pixels. 8
 - (b) a circle whose diameter is 200 pixels. 8

9. WAP to generate the following output.

```
*  
**  
***  
****  
*****
```

- 10 Define goto statement. When can we use goto statement? Write a program to determine whether an input number is prime number or not. 3+5
11. WAP to read a character from keyboard and convert it into uppercase if it is in lowercase and vice versa. 8
12. Write short notes on any TWO: 2×4=8
- ✓ (a) Call by reference
(b) Continue statement and break statement
(c) History of C

PURBANCHAL UNIVERSITY**2016****Bachelor in Information Technology (B.I.T.)/First Semester/Final****Time: 03:00 hrs.****Full Marks: 80 / Pass Marks: 32****BIT17SCO: Computer Programming in C (New Course)**

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

Figure in the margin indicate full marks.

Group A**Answer TWO questions.** **$2 \times 12 = 24$**

(a) Discuss an ordinary and a pointer variable with an example. 3

(b) Write a program, using pointer to sort N integer numbers of an array in descending order. 9

2(a) Mention the importance of a data file. 2

(b) What are the differences between a standard function and a user defined function? 3

(c) A college needs to maintain following information for the records of its students:

Student code (Integer)

Student name (maximum 40 characters)

Age (Integer)

Total Fee (Integer)

Address (maximum 100 characters)

Age (Integer)

Write a program using structure, to input records of N students and arrange these records in alphabetical order and display these records. 7

3. What do you mean by memory allocation? Why is it necessary? Discuss about the various types of memory allocation in C. Also explain the various memory allocation functions. 1+1+5+5



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Follow Your Imaginations...

(2)

Group B

Answer SEVEN questions.

$$7 \times 8 = 56$$

4. Differentiate between structure and union. Discuss unformatted input/output functions. 3+5
5. Write a program to draw rectangle and circle using suitable graphics functions. 8
6. What is string? Discuss various string handling functions. 2+6
7. Write a program to input a line of text and store it in a data file and display number of vowels and white spaces from the given text stored in a data file. 8
8. Why does it make sense to keep certain block of codes inside a function? Differentiate between call by value and call by reference. 2+6
9. Explain the various types of bitwise and logical operators used in C language with proper examples. 8
10. Discuss about the various data types in C. Also explain about the typical structure of a C program. 4+4
11. Define various types of statements. Define loops and explain the difference between for and while loop. 2+6
12. Write a program to generate the prime numbers from 100 to 200. 8



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Follow Your Imaginations...

**PURBANCHAL UNIVERSITY
2017**

Bachelor in Information Technology (B.I.T.)/First Semester/Final

Time: 03:00 hrs.

Full Marks: 80 /Pass Marks: 32

BIT175CO: Computer Programming in C (New Course)

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

Figure in the margin indicate full marks.

Group A

Answer TWO questions.

$2 \times 12 = 24$

1(a) What are the different rules for naming variables? Write an Algorithm and flowchart to find the greatest number among three numbers. **3+4**

(b) Write a program to generate Fibonacci series upto N terms. **5**

2(a) Why do we need to store data into the file? Write a program to draw a Right Angle Triangle and set the line color as RED. **2+4**

(b) Define pointer with syntax. Write a program, using pointer, to find transpose of a given matrix. **1+5**

3(a) Discuss structure with syntax. **2**

(b) Write a program using structure to read Name, Age, Address and Telephone number of N persons and sort them in ascending order by Name and display all the person's detail whose age is greater than 25. **10**

Group B

Answer SEVEN questions.

$7 \times 8 = 56$

4. What is operator? List different types of operators supported in C. Explain in detail the basic Structure of 'C' programming. **1+2+5**

5. Write a program to input average marks of student and show the grade as the following conditions. **8**

Marks	Grade
0-39	F
40-49	D
50-59	C
60-79	B
80-100	A

(2)

6. Differentiate between call by value and call by reference. Write a program to swap two variables showing the example of call by reference.

7. Write a program to determine whether the given number is a palindrome or not.

8. Explain primary data types. Discuss unformatted input functions.

9. Discuss memory management functions. Write a program to find the sum of elements of a given array, using DMA.

10. Define and list the different types of Array with syntax. Write a program to print the following pattern:

1						
1	2					
1	2	3				
1	2	3	4			
1	2	3	4	5		
1	2	3	4	5	6	

11. Write short notes on any TWO:

(a) String handling functions

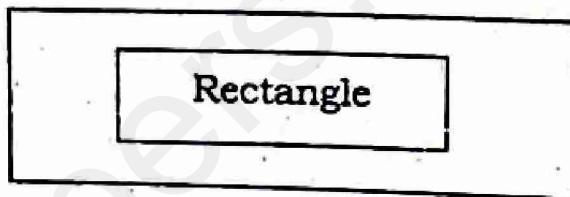
(b) Difference between Structure and Array

(c) Opening Modes of File



(2)

6. Discuss file opening modes. Write a program to create a source file and then copy its content into another file. 4+4
7. List out the differences between an interpreter and complier.
- ✓ Write a program to determine whether a given number is palindrome or not. 3+5
8. Define backslash character constant. Discuss unformatted input/output functions with syntax. 2+6
9. Discuss conditional operator with an example. Write a program to find the sum of digits of a given integer number. 3+5
10. Define multidimensional array. How is it declared and initialized? Write a program search a given element in an array consisting of N elements. 1+2+5
- 11(a) Write a program to draw following: 5



- (b) Write a program to reverse to string using string function. 3
12. Write short notes on any TWO: 2×4=8
- (a) Preprocessor directive
 - (b) Data type
 - (c) Ternary operator

**PURBANCHAL UNIVERSITY
2019**

Bachelor in Information Technology (B.I.T.)/First Semester/*Final*

Time: 03:00 hrs.

Full Marks: 80 /Pass Marks: 32

BIT175CO: Computer Programming in C (New Course)

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

Figure in the margin indicate full marks.

Group A

Answer TWO questions.

$2 \times 12 = 24$

- 1(a) Define the following terms: *C tokens, Keywords, Identifiers.*
Discuss different data types in C with examples. Why do we comment a program? 6+4+2

- 2(a) What is the difference between while loop and do-while loop? Find the output that will be generated by the following program: 2+4

```
#include <stdio.h>
int main( )
{
    int i = 0, x = 0;
    while ( i < 20 ) {
        if ( i % 5 == 0 ) {
            x += i;
            printf( "%d", x );
        }
        ++i;
    }
    printf( "\nx = %d", x );
}
```

- (b) What is the difference between '=' and '==' operators in C. Write a C program that asks user to enter temperature in Celsius (C) and converts it into Fahrenheit (F). The Conversion formula is: $C=5(F-32)/9$: 2+4

- 3(a) What do you mean by precedence and associativity of operators?
A marking scheme in a particular exam is as follow.

(2)

Marks (in %)	Grade
80 -- 100	A
60 - 79	B
50 - 59	C
40 - 49	D
0 - 39	E

Write a program that asks student to enter his/her mark in any subject and print the equivalent grade. Your program should display "Invalid Input!", if the mark entered is less than 0 or more than 100 4+8

Group B

Answer SEVEN questions.

7×8=56

4. Write a program to enter n numbers in an array, and compute the sum of only prime numbers in the array. 8
5. Write a program to multiply given two matrices of given orders. 8
6. What do you mean by functions in C? Write its advantages. Using user defined function, write a program to find maximum value among three integers. 2+2+4
7. What do you mean by recursion? Write a program to calculate factorial of a given number using recursion. 2+6
8. Write any two differences between structure and union. Describe nested structure with example. 2+6
9. Discuss different file opening modes. Write a program to copy content of one text file to another. 4+4
10. Write a program using pointer to search a given element in an array of size, N. 8
11. Write short notes on any TWO:
 - (a) Algorithm and Flow Chart
 - (b) String Handling Functions
 - (c) DMA4+4



PURBANCHAL UNIVERSITY

2018

Bachelor in Information Technology (B.I.T.)/First Semester/Final

Time: 03:00 hrs.

Full Marks: 80 /Pass Marks: 32

BIT175CO: Computer Programming in C (New Course)

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

Figure in the margin indicate full marks.

Group A

Answer TWO questions.

2×12=24

- ✓ 1(a) Differentiate between call by value and call by reference with examples. 4
- ✓ 2(b) Write a program to determine whether a given number is palindrome or not, using function and demonstrating with argument and with return value. 8
- ✓ 2(a) Discuss different types of errors with examples. 4
- ✓ (b) Write a program, using pointer, to input a $m \times n$ matrix and find the following: 3+5
(a) sum of principal diagonal elements.
(b) Square roots of sum of square of all even elements.
- ✓ 3(a) Explain break and continue with examples. 4
- ✓ (b) Write a program using concept of DMA to find the third largest element of an array of size N. 8

Group B

Answer SEVEN questions.

7×8=56

- ✓ 4 Discuss priority and associativity with example. Explain bitwise operators with example. 4+4
- ✓ 5 Write a program using structure to input records of 1000 employees and display records of employees having the highest and the lowest salary. Also display the records of all employee working in the “computer” department. Structure members include ID, Name, Salary and Department. 8
- ✓ 6 Differentiate between pre-test loop and post test loop. Write a program to generate Fibonacci series up to N terms. 3+5

(2)

7. Write a program to read content of data file named "PU" and count and display number of characters, white spaces, tab spaces, and newlines present in the content of the file. 8
8. Define importance of symbolic constant. Discuss primary data types. 3+5
9. Write a program which will read a paragraph and count all occurrences of a particular word specified by a user. 8
10. Define array and pointers with its importance. Write a program to draw three concentric circles. 3+5
11. Write short notes on any TWO:
(a) Unformattted input functions
(b) Preprocessor directives
(c) String handling functions



PURBANCHAL UNIVERSITY
2017

Bachelor in Information Technology (B.I.T.)/First Semester/Final

Time: 03:00 hrs.

Full Marks: 80 / Pass Marks: 32

BIT175CO: Computer Programming in C (New Course)

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

Figure in the margin indicate full marks.

Group A

Answer TWO questions.

$2 \times 12 = 24$

1(a) What are the different rules for naming variables? Write an Algorithm and flowchart to find the greatest number among three numbers. 3+4

(b) Write a program to generate Fibonacci series upto N terms. 5

2(a) Why do we need to store data into the file? Write a program to draw a Right Angle Triangle and set the line color as RED. 2+4

(b) Define pointer with syntax. Write a program, using pointer, to find transpose of a given matrix. 1+5

3(a) Discuss structure with syntax. 2

(b) Write a program using structure to read Name, Age, Address and Telephone number of N persons and sort them in ascending order by Name and display all the person's detail whose age is greater than 25. 10

Group B

Answer SEVEN questions.

$7 \times 8 = 56$

4. What is operator? List different types of operators supported in C. Explain in detail the basic Structure of 'C' programming. 1+2+5

5. Write a program to input average marks of student and show the grade as the following conditions. 8

Marks	Grade
0-39	F
40-49	D
50-59	C
60-79	B
80-100	A

(2)

6. Differentiate between call by value and call by reference. Write a program to swap two variables showing the example of call by reference. 4+4
7. Write a program to determine whether the given number is palindrome or not. 8
8. Explain primary data types. Discuss unformatted input functions. 4+4
9. Discuss memory management functions. Write a program to find the sum of elements of a given array, using DMA. 3+5
10. Define and list the different types of Array with syntax. Write a program to the following pattern: 3+5

1						
1	2					
1	2	3				
1	2	3	4			
1	2	3	4	5		
1	2	3	4	5	6	

11. Write short notes on any TWO: 4+4
- (a) String handling functions
 - (b) Difference between Structure and Array
 - (c) Opening Modes of File



PURBANCHAL UNIVERSITY
Time-bound Home Exam 2020

Bachelor in Information Technology (B.I.T.)/First Semester/Final

Time: 03:00 hrs. (+2 Hrs. for Submission)

Full Marks: 80 /Pass Marks: 32

BIT175CO: Computer Programming in C (New Course)

Instructions:

Dear Students!

- This model of examination is for you as the end of your current semester. This examination allows you to write answer from your own place of residence. Follow the following instructions without fail.
- Do not write your name in the answer-sheet(s).
- All the answer-sheets should be sent to college through your approved email in which you have received your question paper.
- Do not write questions in the answer-sheet but mention clearly the question number.
- All the scan/photos of answer-sheets should be clearly visible. Any blur scan/photo will not be considered for evaluation. Responsibility lies with the students to make sure that scan/photos of the answer-sheet are of readable quality.
- Leave 1 inch margin on each side of the answer-sheet.
- Clearly mention your Roll no, subject, program, semester, page number at the right-top of each page as instructed by the Office of the Examination Management.
- Make sure that you send your answer-sheets within the given time. Any email received after the given time will not be acceptable.
- You are strictly advised to write with your own handwriting and that you are not using any unfair means to answer the questions.
- Do not consult during the examination period to any other person in answering the questions.
- Do not post any pictures of taking examination or your answer-sheets in any social-media. Found that may be taken action from University.

Figure in the margin indicate full marks.

Group A

Answer TWO questions.

2×12=24

- 1(a) Differentiate between pre-test loop and post-test loop. Write a program to find sum of first and last digit of a given number. 3+5
- (b) Write an algorithm and flowchart to print the natural numbers up to the number entered by the user. 2+2
2. Explain different file opening modes in C. Write a program to input 20 students information (student_name, student_roll, student_marks) and store them to a data file "student.dat", again finally, read the student-roll number from the user and display the associated student information of the entered roll number reading from the file "student.dat". 3+9
- 3(a) Mention advantages of using a user-defined function. Differentiate between local and global variables. 3+3
- (b) Write a program to read temperature of N days, where N is integer number entered by the user. Sort them in ascending order using pointer concept and display the result. 6

Group B

Answer SEVEN questions.

7×8=56

4. Explain the various types of operators available in C. Explain bit-wise operator with suitable example. 4+4
5. Explain two formatted I/O functions, printf() and scanf() with syntax and example. Write a program to find the greatest of three numbers using ternary operator. 3+5
6. What are identifiers, keywords and escape sequence. Write a program to print the Health Risk based on the air quality index of the following table. 3+5

Health Risk	Air Quality Health Index
Low	1-3
Moderate	4-6
High	7-10
Very high	Above 10

7. What is dynamic memory allocation in C? Why it is useful? Describe memory management functions with suitable example. 1+1+6
8. Write a program to multiply two matrices A and B of order $m \times n$ and $p \times q$ respectively. 8
9. Define nested structure with a proper example. Write a program, using structure to input records of 100 students and display the record of student with the highest marks. The structure members include: student's name, roll, and percentage marks. 2+6
10. Explain break and continue construct. Write a program to find the sum of prime numbers between two numbers entered by the user. 2+6
11. Define pointer. Write a program using pointer to swap contents of two variables. 2+6
12. Write a program to display square of size 150 and four circles on each corner of square having radius 75. 8
