b) Design and develop a C program to find the GCD and LCM any two integers.
Display the resultant.

c) Compute a C program to find whether the given number is prime or not.

Unit – IV

7. a) Define a function. Explain elements of user defined functions with example.

b) What are actual and formal parameters? Explain with an example,how do you pass array as a parameter to a function.

c) Design a C program using functions to read two matrices A and B and to compute the product of A and B if the matrices are compatible for multiplication.

8. a) Define array. Illustrate with an example declaration and initialization of one dimensional array.

b) Design a C program to compare two strings without using built-in function

c) Write a C program to input N real numbers in 1-D array. Compute mean,variance and standard deviation.
Mean= sum/n, variance= $\sum(x_i - \text{mean})^2/n$, Standard deviation =$\sqrt{}$variance

Unit – V

9. a) what is the necessity of a Structure? Demonstrate the use of "Array of Structures" by creating a structure Student having Name and USN. Store the details of 5 students by accepting input from the User.

b) How is an Array different from a Structure? What do you mean by Nested Structures? Write a 'C' program having a structure for storing Employee details such as Name, Id, Salary and Date. The Date member should be a structure with the details such as date, month and year. Store values for one employee and display the details.

10. a) Summarize the operations that can be performed on files and give the corresponding C language functions to perform the operations.

b) What is a Pointer? Write a 'C ' program to demonstrate "pass by reference" to exchange the values of two variables.

BT* Bloom's Taxonomy, L* Level

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NMAM INSTITUTE OF TECHNOLOGY, NITTE

(An Autonomous Institution affiliated to VTU, Belagavi)

First Semester B.E. (Credit System) Degree Examinations

Make up Examinations – January 2016

15CS111 – COMPUTER CONCEPTS AND C PROGRAMMING

Duration: 3Hours | Max. Marks: 100

*Note: Answer **Five full** questions choosing **One full** question from **each Unit**.*

			Marks	BT*
		Unit – I		
1.	a)	List the different types of magnetic storage devices. Explain any two magnetic storage devices.	8	L1, L2
	b)	With a neat diagram explain the functional units of a computer system.	6	L2
	c)	Explain working of OCR with a neat diagram.	6	L2
2.	a)	Explain the standard keyboard layout. Discuss the working of keyboard.	8	L2
	b)	List different types of printers. Explain the working of laser printer with a neat diagram.	6	L1, L2
	c)	What is a computer?Explain information processing cycle.	6	L2
		Unit – II		
3.	a)	Discuss type conversions in C.	6	L2
	b)	What are C tokens? Illustrate various types of C tokens with example.	8	L4
	c)	Give the rules for evaluating arithmetic expressions with example.	6	L2
4.	a)	Differentiate between algorithm & flowchart.	4	L4
	b)	Explain the basic datatypes supported in C language.	8	L2
	c)	Determine the final values of variables c, x, y, z in following programs	8	L5

```
#include<stdio.h>
int main()
{
 int a,b,c;
float x,y,z;
a=10;
b=5;
c= b/a;
x= b/a;
y= float (b/a) ;
z= (b/((float)a));
}
```

```
#include<stdio.h>
int main()
{
 int c,x;
float y,z;

c= 25/10 + 6.5;
x= 25/10+ 6.6;
y= 25/10+ 6.6 ;
z=25/10+ (float) 6.6;
}
```

		Unit – III		
5.	a)	Explain dangling else and null else problem with suitable example.	8	L2
	b)	Design and develop a C program to find a whether the given number is palindrome or not. Print the suitable messages	6	L5
	c)	Compute a C program to read any integer from a user until a negative number is entered and print the sum and average of entered numbers.	8	L4
6.	a)	Explain switch statement with an example. Mention the any 8 rules for switch statement	6	L2

P.T.O

8. a) Write a C program to input N real numbers in 1-D array. Compute mean, variance and Standard Deviation. Mean = sum/N, $Variance = \frac{\Sigma(x_i - mean)^2}{N}$,

STD Deviation= $\sqrt{variance}$.

b) Write a C program using functions to read two matrices A (M x N) and B (P x Q) and to compute the product of A and B if the matrices are compatible for multiplication.

Unit – V

9. a) Write a C program to enter the information like name, register number, marks in 6 subjects of N students into an array of structures, find the average & display grade based on average for each student.

Average	Grade
80 -100	Distinction
60-79	First Class
40 -59	Second Class
<40	Fail

b) Compare array and structure. Explain copying and comparing the structure variables. Illustrate with an example.

10. a) How pointer variables are declared and accessed in a program? Write a 'C' program to read N integers into an array A and find the sum of elements using pointers.

b) Write a 'C' program to copy contents of one file to another file.

BT* Bloom's Taxonomy, L* Level

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NMAM INSTITUTE OF TECHNOLOGY, NITTE

(An Autonomous Institution affiliated to VTU, Belagavi)

Second Semester B.E. (Credit System) Degree Examinations

April - May 2016

15CS111 – COMPUTER CONCEPTS AND 'C' PROGRAMMING

ation: 3 Hours

Max. Marks: 100

*Note: Answer **Five full** questions choosing **One full** question from **each Unit**.*

		Marks	BT*
	Unit – I		
a)	Write note on computers for individuals.	6	L*1
b)	Write note on factors affecting the processing speed of a computer.	6	L2
c)	Explain the various groups of keys in a standard keyboard layout.	8	L2
a)	List different types of printer. With a neat diagram, explain the working of dot-matrix printer.	6	L2
b)	Write note on solid-state storage devices.	6	L2
c)	Name and explain the major types of operating system.	8	L2
	Unit – II		
a)	Explain C constants with examples.	6	L3
b)	Write a C program to check whether a character is vowel or consonant.	6	L5
c)	Write an algorithm and flowchart to check whether a number entered by user is prime or not.	8	L5
a)	Discuss the different data types with examples.	8	
b)	Write an algorithm and flowchart to find GCD and LCM of any two integers.	8	
c)	Develop a C program to print the ASCII character of an alphabet.	4	L5
	Unit – III		
a)	Design a C program to find the sum of series. $1+x+x^2+x^3+\ldots+x^n$	5	L6
b)	Discuss the significance of scanf( ) function with its field width specification. Give example.	7	L2
c)	Compare pre test and post test loops with programming example.	8	L4
a)	What is goto statement in C? Write its syntax and give example.	6	L2
b)	Explain the syntax of conditional operator.	4	L4
c)	Give the syntax of switch statement. Give one example program to demonstrate switch statement.	10	L5
	Unit – IV		
a)	What are the benifits of using functions? Explain the general syntax of defining a function with example.	10	L3
b)	Write a C program to input N integer numbers into a single dimensional array, find and display the first largest and second largest in the array. Write suitable comments.	10	L4

P.T.O.

8. a) Define array. Illustrate with an example declaration and initialization of one dimensional array.
   b) Design a C program to concatenate two strings without using built-in function.
   c) Design a C program to input N integer numbers into a single dimensional array, sort them in ascending order using selection sort technique and then print both given array and sorted array with suitable headings.

Unit – V

9. a) Discuss with an example, how arrays of structures concept can be used in C.
   b) Differentiate between arrays and structures. Give a general format of a structure definition.
   c) Define Pointer. How to declare and initialize pointer variable?

10. a) Give general format for declaring and opening a file. Discuss any six file handling functions available in C library.
    b) Write a program to compute the sum of all elements stored in an array, using pointers.
    c) Write a note on pointer expressions.

BT* Bloom's Taxonomy, L* Level

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NMAM INSTITUTE OF TECHNOLOGY, NITTE

(An Autonomous Institution affiliated to VTU, Belagavi)

First / Second Semester B.E. (Credit System) Degree Examinations

Supplementary Examinations - July 2016

15CS111 – COMPUTER CONCEPTS AND 'C' PROGRAMMING

Duration: 3Hours

Max. Marks: 100

*Note: Answer **Five full** questions choosing **One full** question from **each Unit.***

			Marks	BT*
		Unit – I		
1	a)	What is an optical input device? What are the various optical input devices? Explain any two optical input devices.	10	L*2
	b)	With a neat diagram explain information processing cycle.	5	L2
	c)	Explain how computer accepts input from the keyboard with neat diagram.	5	L2
2	a)	List the different types of magnetic storage devices. Explain any two magnetic storage devices.	8	L2
	b)	What is an operating system? Explain the various types of operating systems.	6	L2
	c)	Explain the various factors affecting the processing speed of a computer.	6	L2
		Unit – II		
3	a)	Define Algorithm. Give the characteristics of algorithm.	5	L2
	b)	Identify the size of various data types in C on a 16 bit machine.	5	L1
	c)	Explain any five types of operators in C.	10	L2
4	a)	Describe the structure of C program and explain it with a program to find the area and perimeter of circle.	10	L3
	b)	Choose the incorrect floating point constants and give reasons for same i) 40,945.65 ii) 428.58 iii) 46E2 iv) 465. v) 46.3.9	4	L3
	c)	What is type conversion? Explain the different type conversions with an example.	6	L2
		Unit – III		
5	a)	Explain switch statement with an example. Mention the any 8 rules for switch statement.	8	L2
	b)	Design and develop a C program to find a product of any 4 numbers entered. If the entered number is a 0 (zero), then it must be excluded for the calculation of product. Print the resultant.	6	L5
	c)	Compute a C program to find the sum of the digits in a single digit and print the resultant value. (Hint: 731 = 7+3+1 = 11 = 1+1 = 2)	6	L4
6	a)	Explain break and continue statements with an example for each.	6	L2
	b)	Mention any 4 character test functions with an example for each.	8	L2
	c)	Design and develop a program in C to find the list of prime numbers in between any two given intervals. Print the resultant.	6	L5
		Unit – IV		
7	a)	Design a C program using functions to read the values into a 2 dimensional array A, find sum of all elements of row, sum of all elements of column, find total sum of all elements of 2D array A and print the results.	8	L6
	b)	Define a function. Explain elements of user defined functions with example.	8	L2
	c)	What is the difference between actual parameters and formal parameters? Illustrate with an example.	4	L2

P.T.O.

16CS111

Unit – III

5. a) Write a short note on GOTO statement in C.
   b) Write a C program to display prime numbers between two intervals.
   c) Explain the syntax of else if ladder with an example.

6. a) Explain about formatted output statement in C.
   b) Write a c program to find the largest of three numbers using nested if else statement.
   c) Discuss the use of continue statement in C with suitable example.

Unit – IV

7. a) With example explain how arrays can be initialized.
   b) Write a C function which will take a integer value as parameter and return a character (A to D) as grade. Grade will be 'A' for 100-80; 'B' for 79-60; 'C' for 59-40 and 'D' for 39-0.
   c) Describe the two ways of passing parameters to functions. When do you prefer to use each of them?

8. a) Differentiate between user defined and library functions.
   b) Write a C program to read and display 'n' integers.
   c) Write a C program to find the sum of all the elements of a matrix using function to find and return the sum.

Unit – V

9. a) Highlight the various attributes that distinguishes between structures and unions.
   b) Explain with syntax and example, the file *read* and *write* functions.
   c) Declare a structure named *Point2D* with attributes x and y. Write a C program that uses pointer to structure to read two points from the user and print the values using the same pointers with necessary labels.

10. a) Define structure. Give its syntax and example.
    b) Write a C program to read elements into an array using a pointer variable and print the values.
    c) Explain with syntax and example, how opening and closing of files are performed in C.

BT* Bloom's Taxonomy, L* Level

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NMAM INSTITUTE OF TECHNOLOGY, NITTE

(An Autonomous Institution affiliated to VTU, Belagavi)

First Semester B.E. (Credit System) Degree Examinations

November - December 2016

16CS111 – COMPUTER CONCEPTS AND 'C' PROGRAMMING

Duration: 3 Hours

Max. Marks: 100

*Note: Answer **Five** full questions choosing **One** full question from **each Unit.***

			Marks	BT*
		Unit – I		
1.	a)	Explain different types of monitors.	8	L*2
	b)	List various printers and depict how a laser printer creates a printed page.	6	L2
	c)	Explain volatile and non volatile memory.	6	L1
2.	a)	Explain how cache memory and registers affects the processing speed.	8	L1
	b)	Define an operating system. Mention the functions of an Operating System.	6	L2
	c)	Discuss how to scan an image.	6	L2
		Unit – II		
3.	a)	Design a flowchart to find the roots of quadratic equation	4	L5
	b)	Explain the following operators used in C. i) Arithmetic ii) Bitwise iii) Relational iv) Logical	8	L2
	c)	List the different stages of SDLC.	3	L1
	d)	Determine the various types of constants used in C with example.	5	L2
4.	a)	Explain the process of type conversions in C with example.	7	L4
	b)	Describe the syntax of conditional operator with example.	4	L2
	c)	Identify any three characteristics of an algorithm.	3	L2
	d)	What are Identifiers? Give example and write any four rules for naming identifiers.	6	L2

P.T.O.