COS 201.1 **Reg. No. ……**

CREDIT BASED SECOND SEMESTER B.Sc. DEGREE EXAMINATION APRIL 2012

COMPUTER SCEINCE

PAPER II –PROGRAMMING IN C

Time: 3 Hrs **Max. Marks: 80**

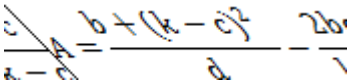
PART – A

1. Answer any TEN questions from the following: **10x2=20**

a) What is initialization? Why is it needed?

b) How do you access a real number through keyboard? Give example.

c) Write the equivalent C expression for the following:



d) Discuss the limitations of getchar( ) and scanf( ) functions while reading strings.

e) What is the use of break and continue statemetns in C?

f) Find the value of the following expressions if a = 10, b = 20, c = -10

i) b > 25 && a < 10

ii) c = = b | | a ! = 20

g) Write the equivalent for loop for the following

```
a = I;
while (a < = 15)
{
    Printf("%d", a*2);
    a = a + 1;
}
```

h) How do we initialize one dimensional array at run time? Give example.

i) Define recursion. Mention any one precaution to be taken while using recursion.

j) Write the output of the following code

```
int p = 15, *ptr ;
ptr = &p;
printf ("%d\t%d", *ptr + 10, p – 5);
```

k) What are the various modes of opening a file?

l) Discuss fseek( ) in C.

PART – B

Answer any TWO questions from each unit

UNIT – I

2. a) What are constants? Explain different types with example.

   b) Write a short note on type conversion in expressions.

   c) Describe the conditional operator with example. **(5+3+2)**

3. a) How can we define symbolic constants in C? List any five rules to be followed while defining them.

   b) Explain the working of 'exit controlled loop' along with its syntax and example.

   c) Discuss increment and decrement operators. Give suitable examples. **(3+5+2)**

4. a) Discuss how can we define, initialize and use 2-dimensional arrays in C.

   b) Explain the working of simple if and if....else statements along with their syntax, and example.

   c) List and explain various bitwise operators. **(4+4+2)**

UNIT – II

5. a) How we can declare and initialize string variables in C? Give suitable example.

   b) What do you mean by function prototype (declaration), function definition and function call. Explain with example.

   c) Give the syntax for structure definition and structural variable. **(3+5+2)**

6. a) Write a program to create a structure STUDENT, which contains Roll No., name and marks in 3 subjects. Calculate total for each student and display the marks list.

   b) Explain static and register storage classes with example.

   c) Explain strcpy( ) and strlen( ) functions **(5+3+2)**

7. a) Write a program to find the length of a given string without using library function.

   b) How we can compare two structure variables in C? Explain with example.

   c) Write a note on Unions. **(4+4+2)**

UNIT – III

8. a. What is a pointer? Explain how can we declare and initialize a pointer.

   b. Explain fprintf( ) and fscanf( ) functions with reference to file handling.

   c. Explain the 4 built in functions that are used with dynamic memory allocation in C. **(3+3+4)**

9. a) Write a program in C to separate ODD and EVEN numbers and store them in two separate files. The numbers should be accessed from a file named DATA.

   b) Write a note on macros. **(5+5)**

10. a. Explain the following functions in C.
    i) ftell( ) ii) fopen( ) iii) feof( ) iv) ferror( )

    b. Write a program using pointers to exchange the values stored in two locations in the memory.

    c. Write the basic file operations supported in C. **(4+4+2)**

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COS 201.1 **Reg. No. ……**

CREDIT BASED SECOND SEMESTER B.Sc. DEGREE EXAMINATION APRIL 2013

COMPUTER SCEINCE

PAPER II –PROGRAMMING IN C

Time: 3 Hrs **Max. Marks: 80**

PART – A

1. Answer any TEN questions from the following: **10x2=20**

a) What are c tokens? Mention any two c tokens.

b) Write the c expression for the following.

i) $x = y + \sqrt{y} - z$ ii) $M = 2a + 4b/c^3 + 5$

c) Differentiate ++I and i++ considering i as an integer variable.

d) What is ternary operator? Explain with example.

e) Why do we need an array variable in C?

f) List and explain any two functions used to read strings in C.

g) What do you mean by scope and life time of a variable.

h) How does a structure differ from an array.

i) What is the purpose of typedef statement?

j) Differentiate pass by value and pass by reference.

k) Explain the purpose of getw( ) and putw( ) function.

l) Write the purpose of ftell( ) with syntax.

PART – B

Answer any TWO questions from each unit

UNIT – I

2. a) What is data type? Explain the basic data types in C.

b) Differentiate the following operators
i) = and = = ii) & and && iii) | and ||

c) What are rules for naming variables in C. **(4+3+3)**

3. a) Write a note on operator precedence and associativity.

b) Explain any five mathematical functions in C.

c) Write a note on short hand assignment operators. **(3+5+2)**

4. a) With example, explain the different forms of if statement.

b) Write a C program to reverse a given integer.

c) Discuss the use of continue statement in a loop. **(4+4+2)**

UNIT – II

5. a) How can we declare and initialize string variables in C? Give suitable example.

b) With syntax and example, explain putchar( ) and puts( ) functions.

c) What is user defined function? With syntax and example, explain function declaration and function definition. **(3+3+4)**

6. a) Distinguish between the following with suitable example.
   i) Global and local variables
   ii) Actual and formal arguments

   b) Write a user defined function to find the largest in an array of numbers.

   c) Explain how you assign value to a structure variable. **(4+4+2)**

7. a) What is a structure? Explain how you define a structure and a structure variable with an example.

   b) Write a note on unions.

   c) What is recursion? Write a recursive function to compute the factorial of a number. **(4+2+4)**

UNIT – III

8. a. What is a pointer? How is it declared and initialized?

   b. Can we pass pointers to functions? Explain with example.

   c. Explain the four built-in functions that are used with dynamic memory allocation in C. **(3+3+4)**

9. a) Write a program to separate ODD and EVEN numbers and store them in two separate files. The numbers should be accessed from a file name DATA.

   b) Write a note on macros. **(5+5)**

10. a. Explain the following functions in C.
    i) fseek( ) ii) fopen( ) iii) feof( ) iv) ferror( )

    b. Write a note on i) #define and #include
    ii) fprintf( ) and fscanf( )

    c. Mention the basic file operations supported in C. **(4+4+2)**

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COS 201(R) **Reg. No. ……**

CREDIT BASED SECOND SEMESTER B.Sc. DEGREE EXAMINATION
APRIL 2014

COMPUTER SCEINCE – II

Digital Electronics – I and Advanced Programming in C

Time: 3 Hrs **Max. Marks: 70**

PART – A

1. Answer any TEN questions from the following: **10x1=10**

a) Convert $(731)_{10}$ to octal.

b) State Duality Principle.

c) State De 'Morgan's theorems.

d) Define SOP and POS.

e) Write the truth table of NOR gate.

f) Prove that x+x=x.

g) Expand EBCDIC.

h) Write the Boolean expression for XOR and XNOR gates.

i) What is union? How is it defined?

j) What is the purpose of * and & operator?

k) What is the purpose of putc() and getc() functions?

l) Differentiate between malloc() and realloc() functions.

PART – B

Answer any TWO questions from each unit.

UNIT – I

2. a) Perform the following subtractions using 1's complement form.

i) $(10110.110)_2 - (10011.100)_2$

ii) $(73)_{10} - (45)_{10}$

b) Perform the following conversions.

i) $(45.18)_{10}=(\quad)_{16}$

ii) $(1001001.011)_2=(\quad)_{10}$

iii) $(73A)_{16}=(\quad)_8$ **(4+6)**

3. a) Obtain the truth table of functions.

$F = xy' + x'z + y'z$

b) State and prove any 2 theorems of Boolean Algebra.

c) Simply the Boolean function.

$f(x,y,z) = \sum(0,2,5,7) + d(1,4)$ using K-map **(3+4+3)**

4. a) Simplify the Boolean functions $F(w,x,y,z) = \sum(1,3,5,8,9,11,15)$ using K-map with don't care condition $d(w,x,y,z) = \sum(0,2,6,10,13)$ and draw the circuit diagram.

b) Write the Sun of Minterm and product of Max-term form for

$F = xy + x'z$ and design the circuit for the given expression. **(7+3)**

UNIT – II

5. a) Design a 2421 code to Excess – 3 code converter.

b) Explain the working of 2 bit magnitude comparator. **(5+5)**

6. a) Explain the working of 2 bit decimal decoder with necessary diagram.

b) With a neat diagram explain the working of a 3 to 8 line decoder.

c) Write a note on multiplexer. **(4+4+2)**

7. a) Design BCD adder.

b) Implement $F(A,B,C) = \sum(0,3,5,7)$ using multiplexer **(6+4)**

UNIT – III

8. a) Define structure? How do you declare and initialize structure type variable?

b) Create a structure to store N student details namely roll no, name and marks in 3 subject. Write a C program to sort the student information according to student name.

c) Explain how to pass the structure to functions. **(4+4+2)**

9. a) Write a program in C to find the sum of all elements stored in an array using pointers.

b) Explain free() and calloc() functions.

c) Write a note on pointer arithmetic. **(5+3+2)**

10. a) Explain the following file related functions

a) getw() b) fseek() c) fread() d) fscanf()
e) rewind()

b) What is a file? Write a C program to copy the contents of one file to another. **(5+5)**

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COS 201.1 Reg. No. .....

CREDIT BASED SECOND SEMESTER B.Sc. DEGREE EXAMINATION APRIL 2016

COMPUTER SCIENCE

PAPER II – PROGRAMMING IN C

Time: 3 Hrs **Max. Marks: 80**

PART – A

1. Answer any TEN questions from the following: **2x10=20**

a) How are comment statements written in C?

b) What are symbolic constants?

c) Write the purpose of % f and %s control string characters.

d) With an example, discuss the use of **? :** Operator.

e) Differentiate putchar ( ) and puts ( ) functions.

f) What is the significance of a null character?

g) Give any one use of user defined function.

h) Distinguish between local and global variables.

i) Write the significance of the following characters.

i) * ii) & iii) . iv) →

j) With syntax, write the purpose of calloc ( ) function.

k) What are preprocessor directives?

l) Explain fseek ( ) in C.

PART – B

Answer any TWO questions from each unit.

UNIT – I

2. a) What are constants? Mention and explain different types of constants. **(4)**

b) Explain the arithmetic, relational and logical operators in Cwith examples. **(6)**

3. a) Write a note on precedence of arithmetic operators. **(3)**

b) What are rules for naming variables in C. **(4)**

c) With example, explain the type conversions in C expressions. **(3)**

4. a) Explain the if ..else if ladder with syntax and example. **(3)**

b) Discuss the working of exit controlled loop with syntax and example. **(4)**

c) Explain the different methods of initializing one dimensional array with example. **(3)**

UNIT – II

5. a) Explain the following string functions with syntax example.
i) strcpy ii) strlen ( ) iii) strcmp ( ) iv) strcat ( ) **(4)**

b) What are storage classes? Explain any three with example. **(6)**

6. a) What is user defined functions? Explain the different elements of user defined function. **(4)**

b) What is structure? How do you define a structure and a structure variable? **(3)**

c) Explain any two categories of functions with example. **(3)**

7. a) What is recursion? Write a recursive function to find the factorial of a numbers. **(4)**

b) How do you create array of structures? Explain with an example. **(3)**

c) What are unions? Write the difference between structures and unions. **(3)**

UNIT – III

8. a) what is a pointer? Explain how can we declare and initialize a pointer. **(3)**

b) What do you mean by dynamic memory allocation? Explain malloc ( ) and free ( ) functions. **(4)**

c) Explain the basic file operations supported by C. **(3)**

9. a) Explain the purpose of getc ( ) and putc ( ) functions with suitable example. **(4)**

b) Explain the following functions in C.
i) fprintf ( ) ii) fscanf ( ) iii) feof ( ) **(6)**

10. a) Write a program using pointers to exchange the value stored in two locations in the memory. **(5)**

b) What is file? Explain any three modes of file access modes with example. **(5)**

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