MCA.I/12.15.1092 Reg. No. | | | | | | | | |

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MCA DEGREE I SEMESTER EXAMINATION DECEMBER 2015

CAS 2102 PROGRAMMING IN C

(Regular and Supplementary – 2014 Revision)

Time: 3 Hours Maximum Marks: 50

PART A

(Answer ***ALL*** questions)

(15 × 2 = 30)

I. (a) What is the usage of preprocessor in C?
(b) What are the various stages of a C program execution?
(c) What is the usage of 'typedef' in C?

II. (a) How can we use the bit wise operators in C for doing multiplication and division?
(b) Write the output of the following program. Write the justification also?

```
main()
{
int i=5;
printf("%d% d% d% d% d",i++,i--,++i,--i,i);
}
```

(c) Write the output of the following program. Write the justification also.

```
main()
{
printf("\nab");
printf("\bsi");
printf("\rha");
{
```

III. (a) Write the output of the following program. Write the justification also.

```
#include<stdio.h>
main()
{
char s[ ]={'a','b','c','\n','c','\0'};
char *p, *str, *str1;
p=&s[3];
str=p;

strt1=s;
printf("%d",++*p + ++*str1-32);
}
```

(b) Write a function in C to swap the values of two variables.
(c) What is meant by function prototyping? What is meant by the data type of a function?

IV. (a) Write the function prototype to send an array of pointers as argument to a function.
(b) Write a note on pointer arithmetic.
(c) What is meant by dreferencing pointers?

V. (a) What is the difference between 'Unions' and 'Structures'? Write any two applications of 'Unions'?
(b) Write the function prototype to send an array of structures as argument to a function.
(c) Write syntax and usage of any two file handling functions.

(P.T.O.)

PART B

(5 × 4 = 20)

VI. Write a program in C to find the largest among a set of numbers which are given as command line arguments.

OR

VII. Write the output of the following C program. What is meant by enumerated data types? Write the applications and usages.

```
enum colors {BLACK, BLUE, GREEN}
main()
{
Printf("%d..%d..%d", BLACK, BLUE, GREEN);
return (1);
}
```

VIII. Write a program in C to sort a set of names stored in an array based on the number of characters in the name. Eg. Output : Biju, Binimol, Abhilash…

OR

IX. Write a program to find the GCD and LCM of three numbers given as input.

X. Write a C program to reverse a string using recursion.

OR

XI. Write a C function to find the saddle point of a matrix.
(Note: An element of a matrix is said to be a Saddle Point if it is the smallest element in its row and largest element in its column).

XII. Write the output of the following C program and justify.

```
main()
{
static int a [3] [3]={1.2.3.4.5.6.7.8.9.}
int i.j.
static *p[ ]=[a.a+1. a+2};
for (i=0• :i<3:i++)
{
for (j=0:j<3:j++)
printf("%d\t%d\t%d\t%d\n".*(*(p+i)+j).
*(*(j+p)+i).*(*(i+p)+j).*(*(p+j)+i)):
}
}
```

OR

XIII. Write the statements in C to declare single dimensional and two dimensional arrays using pointers.

XIV. Write a C program to store the student details (rollno.name.phy.che.mat.tot) in an array of structures and prepare the rank list. Also add a function to search the student details using roll number stored in a union.

OR

XV. Write a C program to merge the contents of two data files ('stud1.txt' and 'std2.txt') which contains the names of students in alphabetical order, into a single data file 'studdata.txt'.

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