

Registration No. :

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Total number of printed pages – 4

B. Tech
BE 2105

First Semester Examination – 2013

PROGRAMMING IN C

QUESTION CODE : C- 608

Full Marks – 70

Time : 3 Hours

Answer Question No. 1 which is compulsory and any **five** from the rest.

The figures in the right-hand margin indicate marks.

1. Answer the following questions :

2×10

Find the output/compilation errors of the programs of questions from a to f excluding d.

(a) #include "stdio.h"

#define C 10;

int main()

{

int a=C;

printf("%d%d", -- (a++), a);

return 1;

}

(b) #include "stdio.h"

#define char int

int main()

{

char a=5,b=10;

printf("%d%d%d", a<b?7:0, a<b, a=b);

return 1;

}

P.T.O.

```
(c) #include "stdio.h"
void main()
{
    int static i=5;
    printf("\t%d", i--);
    if (i) main();
    else return;
}
```

(d) Distinguish between the following two pointer declarations :

- (i) int (*x)[10];
- (ii) int *x[10];

```
(e) #include <stdio.h>
void main()
{
    int x=15, *p=&x, **q=&p, y;
    y=++*p--**p+--**q;
    printf("%d", y);
    return;
}
```

```
(f) #include <stdio.h>
void main()
{
    char *str[]={ "abc", "de", "fgh"};
    char **temp={str+1, str, str+2};
    char ***ptr=temp;
    printf("%s\t", **++ ptr);
    printf("%s\t", * - * ++ptr+4);
    printf("%s\t", *p[-2]+9);
    return;
}
```

- (g) Check the validity of the following statements with proper reasons typedef struct student

```
{  
    char name[10];  
    int roll  
} S;  
S.name[10]={"xyz"};
```

Why the initialization of a variable inside a structure definition is not allowed ?

- (h) What do you mean by self referential structure? Give an example of it.
- (i) Name the data streams that will be automatically opened while a C program begins execution.
- (j) Write any two uses of command line argument.
2. (a) Write a program for converting an input decimal number to its equivalent hexadecimal number. 5
- (b) Write a program to generate PASCAL's triangle up to seven rows. 5
3. (a) How would you distinguish between looping and recursion ? Write a recursive function to find greatest common divisor of two input numbers. 5
- (b) Sort the following numbers in ascending order with respect to their fractional part by means of a program: 5
10.5, 2.75, 13.1, 15.56, 0.8
4. Write a program using pointer to multiply two matrices with usual error checking as well as using separate functions for input, output and multiply. 10
5. (a) Write a program that accepts the name of a person as input and displays his/her name in its short form without using any string library functions. 5
- (b) Find the inverse of a 3×3 matrix by means of a program using functions. 5
6. (a) Write a program to sort the records of 10 students 5
- (b) Create an array dynamically that will store 10 numbers of integer type and then find the greatest number among them. 5

7. (a) Write a program in C to create a file that stores records of employees with following attributes:
Employee code, Employee Name, Phone number, Gross salary 5
- (b) Write a program in C using pointer to count the number of words and characters of an input string. 5
8. Write Short Notes on any **two** of the following : 5×2
- (a) Automatic type conversion vs. typecasting
 - (b) Dynamic memory allocation
 - (c) Monolithic vs. modular program
 - (d) Error handling in file management.

