

Code: 13A12101

B.Tech I Year (R13) Supplementary Examinations December/January 2014/2015

**PROGRAMMING IN C & DATA STRUCTURES**

(Common to CE, ME, EEE, ECE, EIE, IT and Ch.E)

Time: 3 hours

Max. Marks: 70

**PART – A**  
(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

- (a) Write the syntax of conditional operator and explain its operation with an example.
- (b) Define flowchart. Describe the symbols used for representing reading and decision making statements.
- (c) What is the difference between getchar( ) & gets( ) and putchar( ) & puts( )?
- (d) With an example distinguish between break and continue statement.
- (e) What is the output of the following program:

```
#include<stdio.h>
Void main()
{ int a=10,b=30,c=0;
  c= a++;
  c=++b;
  printf("\nc=%d",c);
  printf("\na=%d,\tb=%d",a--,b);
  printf("\na=%d,\tb=%d",a,--b);
}
```

- (f) What is the purpose of strstr()? Give its syntax.
- (g) List the operations performed on a file.
- (h) Write the output for the following program:

```
#include<stdio.h>
main()
{
  int p=4;
  int *pt;
  int **tp;
  clrscr();
  pt=&p;
  tp=&pt;
  printf("p=%d, pt=%d.tp=%d",*pt,p,*(**tp));
}
```

- (i) Define Queue. List the major operations of the queue.
- (j) Write the postfix and prefix notations for the following expression:  $A/B * C + D * E - A * C$ .

**PART – B**

(Answer all five units, 5 X 10 = 50 Marks)

**UNIT - I**

2 Explain the phases of the software development life cycle in detail with a neat diagram.

OR

3 Explain various operators in C with suitable examples.

**UNIT - II**4 (a) Differentiate between *elseif* and *switch* statements with examples.

(b) What is recursion? What are its advantages?

OR

5 (a) What is a Bug? Explain the techniques used for debugging.

(b) Why should we avoid using *goto* statement in programming? How it is different from *continue* statement? Explain with examples.

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**UNIT - III**

- 6 (a) What are the different storage classes in C? Explain.  
(b) Write a C program to add two matrices.

OR

- 7 Write a C program to sort a list of names.

**UNIT - IV**

- 8 (a) What are compiler directive statements? List and define the preprocessor statements in C.  
(b) Write a C program to copy the contents of one file to another.

OR

- 9 (a) Explain various operations on pointers with examples.  
(b) What are the bitwise operations? Explain with examples.

**UNIT - V**

- 10 (a) List and explain the operations on stack.  
(b) Write the algorithm for evaluation of postfix expression.

OR

- 11 Implement queue using linked list.

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