

ALCCS – OLD SCHEME

Time: 3 Hours

FEBRUARY 2012

Max. Marks: 100

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE:

- Question 1 is compulsory and carries 28 marks. Answer any FOUR questions from the rest. Marks are indicated against each question.
- Parts of a question should be answered at the same place.

Q.1 a. Consider the C program shown below:

```
#include<stdio.h>
#define print (x) printf ("%d", x)
int x;
void Q(int z) {
    z+=x; print(z);
}
void p(int *y) {
    int x= *y+2;
    Q(x); *y=x-1;
    print(x);
}
main(void){
    x=5;
    p(&x);
    print(x);
}
```

Write the output of the above program.

- b. Explain the following terms: Interpreter, Compiler, Assembler and Loader.
- c. Consider the following C program segment

```
#include<stdio.h>
#include<string.h>
main()
{
    char p[20];
    char *s= 'string';
    int length= strlen(s);
    for (i=0; i<length; i++)
        p[i]=s[length - i];
    printf("%s",p);
}
```

Write the output of the above segment.

- d. Differentiate between static and dynamic memory allocation with example.
- e. What are scope rules? Write name of four kinds of scopes.
- f. With the help of an example explain union of structures.
- g. Explain principles of documentation. (7×4)
- Q.2** a. Write a program that reads a character from keyboard and then prints it in reverse case that is if the input is upper case , the output will be lower case and vice versa. (9)
- b. The grading in an academic institution is done according to the following rules
- | Average Marks | Grade |
|---------------|-----------------|
| 80 to 100 | Honours |
| 60 to 79 | First Division |
| 50 to 59 | Second Division |
| 40 to 49 | Third Division |
| 0 to 39 | Fail |
- Implement this program using if-else ladder. (9)
- Q.3** a. Explain the difference between static external and simple external variable. Write a C program to illustrate the properties of static variable. (9)
- b. What are the restrictions to conditional operators? (5)
- c. Explain using suitable example the differences between structure and union. (4)
- Q.4** a. Write a program to reverse a singly linked list. (9)
- b. Explain black box testing? Also discuss various black box test design techniques. (9)
- Q.5** a. Write a C program to find rank of a matrix. (10)
- b. State the problems we are likely to encounter when we pass global variables as parameters to functions. (8)
- Q.6** a. Write a program to check for a file whether it is a binary file or ASCII file. (8)
- b. What is the difference between an enumeration and a set of processor # defines? (5)
- c. When do we use rewind() and fseek()? Give suitable example. (5)

Code: CS11 Subject: COMP. PROG. & PROBLEM SOLVING THROUGH C

Q.7 a. What is quick sort? Write a program in C to sort the list of integers using quick sort. (10)

 b. Explain four different types of errors i.e. Syntax errors, Run time errors, Logical errors and Latent errors. (8)