

Code: DC05
Time: 3 Hours

Subject: PROBLEM SOLVING THROUGH 'C'
Max. Marks: 100

JUNE 2011

NOTE: There are 9 Questions in all.

- Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.
- The answer sheet for the Q.1 will be collected by the invigilator after 45 Minutes of the commencement of the examination.
- Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.
- Any required data not explicitly given, may be suitably assumed and stated.

Q.1 Choose the correct or the best alternative in the following: (2 × 10)

a. In the following code fragment, the output will be:

```
int a = 12;  
printf("%o", a);
```

- (A) 14 (B) 12
(C) 10 (D) syntax error

b. The void type is used for

- (A) returning the value (B) creating generic pointers
(C) creating functions (D) avoid error

c. % e represents

- (A) a real number (B) expression
(C) unsigned integer (D) a pointer

d. The variable that are declared outside all the function are called

- (A) local variable (B) global variable
(C) auto variable (D) none of the above

e. Consider the following statements

```
int x = 6, y = 8, z, w;  
y = x++;  
z = ++x;
```

The value of x, y, z by calculating the above expression are:-

- (A) y = 8, z = 8, x = 6 (B) y = 6, x = 8, z = 8
(C) y = 9, z = 7, x = 8 (D) y = 7, x = 8, z = 7

f. To declare an array s that holds a 5 character string, you would write:-

- (A) char s[5] (B) string s[5]
(C) char s[6] (D) string s[6]

- Q.7** a. Define a structure for a student having name, roll number and marks obtained in six subjects. Write a program to input the details for 20 students and print the details of the students who have scored more than 80% marks overall. **(12)**
- b. Differentiate between run-time errors and logical errors. **(4)**
- Q.8** a. Write any four file-related functions and explain their use. **(8)**
- b. Write a C program that removes duplicates from an ordered array. **(8)**
- Q.9** a. Discuss the various aspects of program design. How does program design relate to program efficiency? **(10)**
- b. Write brief note on the following:
- (i) Basic path testing.
 - (ii) Black box testing. **(6)**