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SP-9179

Seat No._____

P.G.D.C.A. (Sem. I) Examination

April / May – 2006

Paper - 2 : Problem Solving Using C

Time : **3** Hours] [Total Marks : **100**

1 Answer the following questions : (any **two**) **20**

(a) Write a note on UDF in C. How we can pass pointer as an argument. Explain with example.

(b) Explain dynamic memory allocation with related function and suitable example.

(c) Write a note on structure and pointer to structure with suitable example.

2 (a) Write output of following programs : **10**

(1)

```
main ( )
{
  int x = 5, y = 7, z = 8;
 for (; 50 < 100 ; x++, y++)
 {
white (y > = x)
 {
   break;
   printf ("\n%d %d %d", x, y, ++z);
  y– –;
  }
if (x ==5)
  break;
else
  continue;
 }
}
```

(2)

```
main ( )
{
  int x = 5, y = 10, *a, *b, *c.
  a = &y;
  b =&x;
  *a = ++y – x++;
  *b = – –y + x– –;
   x = (*a + b) + (a - *b);
   *c = *b;
   printf ("x = %d and y = %x", x, y);
  }
```

(b) Attempt following : (any **one**) **10**

(1) Write a program to prepare two dimensional array to store %rate of DA for two cities and 3 categories of workers. Elements of array contains % age for DAT for each city and category. Input worker name city code, category of worker basic salary from keyboard. Find appropriate %rate of DA from array and calculate DA. Display Gross salary on screen and also display total rupees to be paid by company to all employees. Put provision to terminate program.

(2) Write a function that accepts characters into a string by using pointer. Compute the length of the array using a pointer (string is terminated by null character). Print the string in reverse order using pointer.

3 (i) Distinguish the following : **10**

(a) Structure ***v/s*** Union

(b) Static ***v/s*** Automatic

(c) while loop ***v/s*** do....while loop

(d) ++a ***v/s*** a++

(e) Buffered file ***v/s*** Unbuffered file.

(ii) Explain following functions with syntax and example : (any **five**) **10**

(a) fseek ( ) (b) scanf ( ) (c) fprintf ( )
(d) fabs ( ) (e) isdigit ( ) (f) strcat ( )
(g) getch ( )

4 Answer the following questions : (any **four**) **20**

(a) Distinguish recursive and non-recursive functions with suitable example.
(b) Explain back slash codes with examples.
(c) What are bit fields? How are they useful?
(d) Explain with suitable example :
  (i) Function call by value
  (ii) Function call by reference.
(e) List the operators available in C. Explain any two with example.
(f) Explain nesting of loops with example.

5 (i) Fill in the blanks : **5**

(a) _____function clears end-of-file indicator only.
(b) The format %lu is for _____data type.
(c) Default initial value of external storage class is_____
(d) The local variables are stored in _____ area of memory.
(e) If data type of UDF is not declared, _____ type will be returned by UDF.

(ii) Attempt the following : (any **two**) **20**

(a) Write a C program to develop following series using recursive function.
  1 8 27 64 125 ..... up to N-step
(b) Write a program to create a random data file having following structure :

no	as	integer
name	as	character 20
ph_no	as	character of 6

  Append records in data file and put duplication check for field "no".
  Put
  provision to terminate program.
(c) Input a sentence from keyboard and calculate the average of upper case letters and average of lower case letters separately.
