April-2016

किनार - 013

Seat Number

* 0 6 5 7 *

COMPUTER SCIENCE PAPER - II : UG-CS-122
C Programming - II
(124202)

P. Pages : 4

Time : Two Hours **Max. Marks : 60**

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Graph or diagram should be drawn with the black ink pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Write a C language code as a example wherever necessary.
5. Figures to the right indicate full marks.
6. All questions are compulsory.

1. a) Attempt **any six.** **6**

a) In passing argument by reference, the variables of formal parameters must be prefix with.....

i) & ii) •
iii) * iv) %

b) Pointer is a variable which holds..... of another variable.

i) Address ii) Index
iii) Value iv) None of these

c) A..... is a collection of data items under one name in which the items share the same storage.

i) Array ii) Structure
iii) Pointer iv) Union

d) The graphics function which gives current location of file pointer in the file is.....

i) fseek() ii) ftell()
iii) rewind() iv) feof()

e) If a local variable has to hold it's value between calls to the function it must be declared as.....

i) Auto ii) Register
iii) Static iv) Extern

f) ..... can also be used to access the members of the structure.
i) Arrays ii) Pointers
iii) Functions iv) None of these

g) To plot a single •(dot) on screen you have to use..... graphics function.
i) getpixel() ii) getmaxx()
iii) initgraph() iv) putpixel()

h) The mode ..... is used for opening a file for updating.
i) Read ii) Write
iii) Append iv) None of these

b) Attempt **any six.** 6

a) What happens when actual arguments in function call are less than formal arguments in a function ?

b) Explain meaning and purpose of size of operator.

c) Consider the following declarations :
int x = 10, y = 10; int $\varphi p_1 = \& x$, $\varphi p_2 = \& y$; What is value of the expression $++(*p_2) - *p_1$;?

d) How to initialise graphics in C ?

e) What is significance of EOF ?

f) Write syntax and purpose of graphics function line().

g) A function to divide two floating point numbers is :

```
divide (float x, float y)
{
    return (x/y) ;
}
```

what will be value of following function call :
divide (4.5, 1.5) ;

h) How does a structure differs from an array ?

2. Attempt **any six.** 12

a) Write a C statements that allocate a memory to a float variable eight times the size of float.

b) Which arithmetic operators are permitted on pointers ?

c) Write syntax and purpose of graphics function outtextxy().

d) Write a general format of fseek() function with example.

e) Define a structure called COMPLEX consisting of two floating point numbers x & y, also declare a variable of type structure COMPLEX.

f) What will be output of following program :

```
Void test (int * x);
Main ( )
{
  int p1=25 ;
  test (& p1) ;
  printf (" % d", p1) ;
}
void test (int * x)
{
  * x=* x + 25 ;
}
```

g) What is printed by following program :

```
Main ( )
{
  int n = 50, φp1 = & n;
  φp1 = φp1/2 ;
  int φφp2 = & p1 ;
  printf (" % d ", φφ p2 ) ;
}
```

h) How does append mode differs from write mode in file handling.

i) What is bit field in C? Explain.

3. Attempt **any four.** 12

a) Write a user defined function length (char S[ ]) which computes length of given input string.

b) Write a program segment that draws a circle at point (200, 400) with radius 100.

c) Write differences between structure and union in C.

d) Write syntax and purpose of following functions in C.
   i) putc() ii) fprintf()

e) Describe in brief concept of pointer to function.

f) What do you mean by nesting of structures ? Illustrate the concept with an example.

4. Attempt **any three.** 12

a) Consider following recursive definition for finding Fibonacci numbers :

$$fib(n) = \begin{cases} 1 & n = 0 \text{ or } 1 \\ fib\,(n-1) + fib\,(n-2) & n > 1 \end{cases}$$

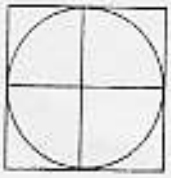
Write a recursive function that finds Fibonacci numbers as mentioned above.

b) What is output of following program code :

```
int m[2], *p, *q;
m[0]=100, m[1]=200;
p=&m[0];q=&m[1];
printf (" %d| t% d | t", ++*p, --*q) ;
```

c) Write a short note on self referential structure.

d) Write a program that draws following shape in current drawing color.



e) Define :
i) Record ii) File
How to open and close file ? Explain.

5. Attempt **any two.** 12

a) What do you mean by command line arguments ? Write a program that displays contents of given file using command line arguments.

b) Define a structure EMPLOYEE with following members :
emp_no, emp_name, designation, salary. Write a program that accepts 5 employee records and print them (make use of array of structure).

c) i) Discuss in brief about register and extern storage classes.

ii) Write syntax and purpose of following graphics functions :
i) ellipse() ii) setcolor()

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