Ref. No.: EX/IT/T/111/2018

BACHELOR OF INFORMATION TECHNOLOGY
EXAMINATION, 2018
1st YEAR 1st SEMESTER
Introduction to Programming

Time: 3 Hours

Full Marks: 100

Question number 1 is mandatory.
Answer any one from question number 2 and 3
And answer any TWELVE from question number 4

NOTE:

- Please make your answer script clean.
- Write all parts of a question in a single place.
- Give the corresponding output of your program whether mentioned or not, when you are asked to write a program.

1. Explain why the below statements are true or false. Answer without explanation will be considered as void. 10 x 2=20
   - **a.** continue keyword skip one iteration of loop.
   - **b.** Two case constants within the same switch statement can have the same value.
   - **c.** The expressions *ptr++ and ++*ptr are same.
   - **d.** Three declarations char **apple, char *apple[ ], and char apple[ ][ ] are same.
   - **e.** In a call to printf() function, the format specifier %b can be used to print binary equivalent of an integer.
   - **f.** We can specify a variable filed within a scanf() format string.
   - **g.** Preprocessor directive #undef can be used only on a macro that has been #define earlier
   - **h.** There exists a way to prevent the same file from getting #included twice in the same program.
   - **i.** Every time we supply new set of values to the program at command prompt, we need to recompile the program.
   - **j.** In C, all functions except main() can be called recursively.
   - **k.** During the compilation process the statement #include<stdio.h> gets replaced by the content of the file stdio.h.
   - **l.** It is necessary that a header files should have a .h extension.

2. Answer the following questions: 5 x 4 = 20
   - **a.** Write a function remove() which delete all occurrences of a given character from a string. The function should take two arguments: the string name and the character to be removed.
   - **b.** Define a preprocessor swap(t,x,y) that will swap two arguments x and y of a given type.

c. Write a recursive function to calculate the sum of digits of the n-digit number passed as argument.

d. Draw the equivalent flow-chart of do-while and for loop.

3. Answer the following questions: 10 x 2 = 20

a. Draw a flowchart for comparing two dates where one in dd/mm/yyyy format and another one in mm/dd/yyyy format. The output of the flowchart will be 0 if the two dates are same, 1 if first date is later than second date and -1 if the first date is earlier than second date.

b. Discuss "Call by Value" and "Call by reference" with examples. Distinguish between actual and formal parameters. Write a function which returns a pointer to an array.

4. Check whether the following code snippet will execute successfully. If not, then why? If yes, then what will be the output? Answer without explanation in both yes and no cases will be considered as void. 12 x 5 = 60

A	main(){
	int i,j;
	for(i = 0; i<10;i++){
	j = i+10;
	if(j == 15)
	break;
	}
	printf("%d", i);
	}
		B	main(){
			int i;
			for(i = 1; i<10;i++){
			if(i%2 == 0)
			continue;
			}
			printf("%d \n", i);
			}

C	main(){
	int i =5;
	for(i = 0; i<15;i++){
	printf("%d %d", ++i, i++);
	}
	}
		D	main(){
			int i = 5, j = 2;
			float a, b = 2, c;
			a = i / j; c = i / b;
			printf("%f %f \n", a, c)
			}

E	#define a 10
	main(){
	#define a 50
	printf("%d", a);
	}
		F	main(){
			int i = 5;
			printf("%d %d %d %d %d", i++, i--, ++i,
			i);
			}

G	void main(){
	static int i = i++, j = j++, k =
	k++;
	printf("i = %d j = %d k = %d",
	i, j, k);
	}
		H	main(){
			int p = 5;
			int *q = &p;
			printf("%d \n", ++*&*q);
			}

I	int main(){
	int i=3, *j, k;
	j = &i;
	printf("%d\n", i**j*i+*j);
	return 0;
	}
		J	int main()
			{
			static char *s[] = {"black", "white", "pink", "violet"};
			char **ptr[] = {s+3, s+2, s+1, s}, ***p;
			p = ptr;
			++p;
			printf("%s", **p+1);
			return 0;
			}

K	void main(){
	char *p = "abcde";
	while(*p++ != 'c');
	printf("%s", p);
	}
		L	main ( ){
			int i , sum = 0;
			While (1){
			scanf ("%d", & i);
			Sum + = i ;
			if (sum % 5 = = 0) break ;
			}
			}

M	#include<stdio.h>
	int main()
	{
	display();
	return 0;
	}
	void display()
	{
	printf("jaduniv.org");
	}
		N	#include<stdio.h>
			int main()
			{
			int (*p)() = fun;
			(*p)();
			return 0;
			}
			int fun()
			{
			printf("IndiaMax.org\n");
			return 0;
			}

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