MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

I SEMESTER B.TECH. INTERNAL EXAMINATIONS SAMPLE
TEST - 1
SUBJECT: - PROBLEM SOLVING USING COMPUTERS [CSE 1051-OLD]

Date of Exam: Max. Marks: **15**

Instructions to Candidates:

Answer ALL the questions.

Q1	What is the output of the following code snippet?
	
	#include<stdio.h>
	void main()
	{
	int a[10]={1, 2, 4, 5, 6};
	int i=1,p;
	p=++a[1];
	printf("%d, %d, %d", a[5], p, a[i++]);
	}
	1. ** 0,3,3
	2. 234556, 3, 2
	3. 5, 2, 3
	4. 0, 2, 3
		0.5

Q2	For the error free C program below, what will be the output?
	
	int main( )
	{
	int n=0;
	do {
	n++;
	if ((n % 3) == 0 || (n % 4) ==0)
	printf("%d\t", n);
	} while(n<5);
	}
	1. 0 3
	2. 0 4
	3. ** 3 4
	4. 4 4
		0.5

Q3	. For initialization a = 2, c = 1 the value of a and c after the execution of the instruction will be c = (c) ? a = 0 : 2; 1. a = 1, c = 2; 2. a = 2, c = 2; 3. a = 2, c = 2;	0.5

	4. ** a = 0, c = 0;	

Q4	For the error free C code snippet below, what will be the output?
	
	int main()
	{
	int i = 4;
	switch (i){
	default: ;
	case 3:
	i += 5;
	if (i == 8) {
	i++;
	if (i == 9) break;
	i *= 2;
	}
	i -= 4;
	break;
	case 8:
	i += 5;
	break;
	}
	printf("%d", i);
	
	}
	
	1. ** 5
	2. 8
	3. 4
	4. 9
		0.5

Q5	Assuming int data type occupies 4bytes of location, what will sizeof(arr) be, If int arr[10]={12,13,14}. 1. 12 bytes 2. 10 bytes 3. 44 bytes 4. ** 40 bytes.	0.5

Q6	What is the output of the following error free C program?
	
	int main(){
	int i=2, n, j;
	for (n=5; i<n; i++) {
	for(j=2; j<=4; j++) {
	if (j%2 != 0) continue;
	printf("%d\t", i*j); }
	if (i%3 == 0) break; }
		0.5

	return 0; } 1. ** 4 8 6 12 2. 4 6 8 10 3. 4 8 10 12 4. 6 4 8 10	
Q7	Which of the for loop given below has the range of similar indexes of 'i' used in for (i = 0;i < n; i++) ? 1. for (i = n; i>0; i--) 2. for (i = n; i >= 0; i--) 3. for (i = n-1; i>0; i--) 4. ** for (i = n-1; i>-1; i--)	0.5

Q8	What is the output of below given code?
	#include <stdio.h>
	int main()
	{
	enum result {fail, pass, unknown, known};
	enum result s1=unknown;
	if(pass! =2) printf("%d",s1);
	else printf("%d",known);
	}
	1. Unknown
	2. 1
	3. ** 2
	4. 3
		0.5

Q9	A flowchart needs to represent a situation where a student is awarded 'Pass' or 'Fail'. If the mark is > 50 award 'Pass', else award 'Fail'. Which of the following construct is used in this situation? 1. ** decision 2. looping 3. Sequential 4. Random	0.5

Q10	What is the output of the following error free C code? (0.5)
	#include<stdio.h>
	int main( )
	{
	int x = 15, z = 3;
	int y = x >> 2;
	printf(" %d\n", y);
	}
	5. 6
	6. 60
	7. ** 3
	8. 30
		0.5

Q11	Write a complete C program to input a number N and check if the digit in the tenth place of	2

	N is a perfect square. If it is perfect square, find and display the square root of that digit. Else find and display the square of that digit. (Use if-else statements only)	
Q12	Differentiate between linear search and binary search (any two points). Write a C program to sort the elements of an array in ascending order using bubble sort.	3
Q13	Draw a flowchart to accept a number N from the user and to print the sum of squares of all natural numbers from 1 to N.	2
Q14	Differentiate between exit controlled and entry controlled loop (any two points). Write a complete C program to read N numbers (positive integers) and find the second largest number among them (without using arrays and functions).	3