**FA4 – Team 3 Set 1**

**4 MCQs of 1 Mark each**

Que 1. Consider the following c declaration?

struct node

{

   int i;

   float j;

};

struct node \*s[10];

**a) An array, each element of which is a pointer to a structure of type node**

b) A structure of 2 members, each member being a pointer to an array of 10 elements

c) A structure of 3 members: an integer, a float, and an array of 10 elements

d) An array, each element of which is a structure of type node

Que 2  What is the correct syntax to initialize bit-fields in an structure?

a**) struct temp**

**{**

**unsigned int a : 1;**

**}s;**

b) struct temp

{

unsigned int a = 1;

}s;

c) struct temp

{

unsigned float a : 1;

}s;

d) None of the mentioned

Que 3 What type of data is holded by variable u in this C code?

#include <stdio.h>

union u\_tag

{

int ival;

float fval;

char \*sval;

} u;

    The variable u here  
**a) Will be large enough to hold the largest of the three types;**b) Will be large enough to hold the smallest of the three types;  
c) Will be large enough to hold the all of the three types;  
d) None of the mentioned

Que 4. Predict the output of above program. Assume that the size of an integer is 4 bytes and size of character is 1 byte.

union test

{

   int x;

   char arr[8];

   int y;

};

int main()

{

   printf("%d", sizeof(union test));

   return 0;

}

(A) 12

(B) 16

**(C) 8**

(D) Compiler Error

**3 MCQs of 2 Marks each**

Que .5 What is the output of this C code? <Assume that any pointer takes 4 bytes>

#include <stdio.h>

struct student

{

char \*c;

};

void main()

{

struct student s[2];

printf("%d", sizeof(s));

}

a) 2  
b) 4  
c) 16  
**d) 8**

Que 6 Consider the following-

struct s  
{  
int x;  
int y;  
}abc;  
  
You cannot access x by the following.  
  
1. abc -> x  
2. abc[0] ->x  
3. abc.x  
4. (abc) ->x  
  
a) **Option 1,2 and 4**b) Option 2 and 3  
c) Option 1 and 3  
d) Option 1,3 and 4

Que 7 Consider the following code segment

struct car  
{  
int speed;  
car type[10];  
} vehicle;  
struct car \*ptr;  
ptr = &vehicle;  
  
Referring to the code above, which of the following will make the speed equal to 200?  
  
**a) ( \*ptr).speed = 200.**  
b) ( \*ptr) ->speed = 200.  
c) \*ptr.speed = 200.  
d) &ptr.speed = 200.

**Coding Question of 10 mark**

Que 1. Patrick has a list containing Roll No., Name and Marks of N students. He wants an application to sort the list according to Marks (in Descending order). Also, he wants to give a message "CANNOT SORT" if number of students are not in given limit. Write a C Program to help him.

Constraint: 1<=N<=10

**Sample Input 1:**

3

101

105

115

Neeraj

Ashish

Ankur

65

98

74

**Explanation**: First line contains the no. of students i.e. N. Next N lines contains the Roll No, Name & Marks of students.

**Sample Output 1:**

105 Ashish 98

115 Ankur 74

101 Neeraj 65

**Explanation**: Output contains N lines sorted by Marks, separated by a space.

**Sample Input 2:**

11

Explanation: First line contains the no. of students i.e. N.

**Sample Output 2:**

CANNOT SORT

**Test Case 1:**

**Input:**

12

**Output:**

CANNOT SORT

**Test Case 2:**

**Input:**

2

101

105

Neeraj

Ashish

65

98

**Output:**

105 Ashish 98

101 Neeraj 65

**Test Case 3:**

**Input:**

1

101

Ankur

65

**Output:**

101 Ankur 65

**Test Case 4:**

**Input:**

6

101

105

115

103

102

116

Neeraj

Ashish

Ankur

Tom

Jerry

Potter

65

98

74

56

45

34

**Output:**

105 Ashish 98

115 Ankur 74

101 Neeraj 65

103 Tom 56

102 Jerry 45

116 Potter 34

**Test Case 5:**

**Input:**

7

101

105

115

103

102

116

120

Neeraj

Ashish

Ankur

Tom

Jerry

Potter

Naman

65

98

74

56

45

34

30

**Output:**

105 Ashish 98

115 Ankur 74

101 Neeraj 65

103 Tom 56

102 Jerry 45

116 Potter 34

120 Naman 30

**Solution**

**#include<stdio.h>// read-only code stub**

**struct student**

**{**

**int rollno;**

**char name[50];**

**int score;**

**};**

**int main()**

**{**

   struct student s[20],temp;

   int i,j,n;

   scanf("%d",&n);

   if(n>10)

   {

       printf("CANNOT SORT");

   }

   else

   {

   for(i=0;i<n;i++)

     {

       scanf("%d",&s[i].rollno);

       }

       for(i=0;i<n;i++)

     {

       scanf(" %[^\n]s",&s[i].name);

       }

       for(i=0;i<n;i++)

     {

       scanf("%d",&s[i].score);

       }

   for(i=0;i<n-1;i++)

   {

      for(j=0;j<n-i-1;j++)

      {

           if(s[j].score<s[j+1].score)

           {

               temp=s[j];

               s[j]=s[j+1];

               s[j+1]=temp;

           }

       }

   }

   for(j=0;j<n;j++)

       printf("%d %s %d\n",s[j].rollno,s[j].name,s[j].score);

   }

}