**10 MCQ (1 mark each)**

Q.1. Value of EOF in C is \_\_\_\_\_\_\_\_.

A) -1

B) 0

C) 1

D) Null

Q.2. What is the similarity between a structure, union and enumeration?

A) All of them let you define new values

B) All of them let you define new data types

C) All of them let you define new pointers

D) All of them let you define new structures

Q.3. Bit fields CANNOT be used in union.

A) True

B) False

Q.4. The '.' operator can be used access structure elements using a structure variable.

A) True

B) False

Q.5. It is not possible to create an array of pointer to structures.

A) True

B) False

Q.6. Which function checks the end-of-file indicator for the given stream in C?

A) eof()

B) EOF

C) feof()

D) None of the above

Q.7. Which of these is a user-defined data type in C?

A) int

B) union

C) char

D) All of these

Q.8. Which function is used to open a file in C?

A) open()

B) fopen()

C) file\_open()

D) fileopen()

Q.9. Which of the below statements is incorrect in case of union?

A) Union is a user-defined data structure

B) All data share same memory

C) Union stores methods too

D) union keyword is used to initialize

Q.10. In the following code what is 'P'?

typedef char \*charp;

const charp P;

A) P is a constant

B) P is a character constant

C) P is character type

D) None of above

**5 MCQ (2 mark each)**

Q.1. Which of the following statements are correct about the program?

#include<stdio.h>

int main()

{

printf("%p\n", main());

return 0;

}

A) It prints garbage values infinitely

B) Runs infinitely without printing anything

C) Error: main() cannot be called inside printf()

D) No Error and print nothing

Q.2. What will be the output of the program?

#include<stdio.h>

int main()

{

struct value

{

int bit1:1;

int bit3:4;

int bit4:4;

}bit;

printf("%d\n", sizeof(bit));

return 0;

}

A) 1

B) 2

C) 4

D) 9

Q.3. What will be the output of the program?

#include<stdio.h>

int main()

{

struct byte

{

int one:1;

};

struct byte var = {1};

printf("%d\n", var.one);

return 0;

}

A) 1

B) -1

C) 0

D) Error

Q.4. Point out the error in the program?

typedef struct data mystruct;

struct data

{

int x;

mystruct \*b;

};

A) Error: in structure declaration

B) No Error

C) Linker Error

D) None of above

Q.5. What will be the output of the program?

#include<stdio.h>

int main()

{

struct emp

{

char \*n;

int age;

};

struct emp e1 = {"Dravid", 23};

struct emp e2 = e1;

strupr(e2.n);

printf("%s\n", e1.n);

return 0;

}

A) Error: Invalid structure assignment

B) DRAVID

C) Dravid

D) No output

**2 Coding Questions (5 mark each)**

Q.1. BCCI wants to maintain the record of scores of players and teams, write a C program to create a structure which will contain name of the player and runs scored by player. Calculate total runs scored by cricket team with using structure.

**Sample Input 1**

3

Virat 90

Kohli 80

Sehwag 125

**Sample Output 1**

Total Score: 295

**Sample Input 2**

2

Raina 100

Dhoni 200

**Sample Output 2**

Total Score: 300

**Input Explanation**

Input consists of multiple lines.

First line input will be integer value that represents number of players.

Second line to nth line input will be one string value and one integer value separated with space that represents name of the player and player score respectively.

**Output Explanation**

Output consists of formatted value which represents total runs of team.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Test Case 1** | **Test Case 2** | **Test Case 3** | **Test Case 4** | **Test Case 5** |
| **Input** | 1  Jadeja 50 | 2  Bumrah 100  Laxman 150 | 3  Rohit 50  Rahul 60  Kohli 100 | 2  Nehra 60  Kumbale 60 | 1  Sachin 200 |
| **Output** | Total Score: 50 | Total Score: 250 | Total Score: 210 | Total Score: 120 | Total Score: 200 |

**#Solution**

#include<stdio.h>

struct team

{

char name[20];

int runs;

};

void main()

{

int i,score=0, players;

scanf("%d",&players);

struct team a[11];

for(i=0;i<players;i++)

{

scanf("%s %d",a[i].name,&a[i].runs);

}

for(i=0;i<players;i++)

{

score=score+a[i].runs;

}

printf("Total Score: %d",score);

}

Q.2. Write a program in C to find the Factorial of a number using recursion.

**Sample Input 1**

5

**Sample Output 1**

120

**Sample Input 2**

6

**Sample Output 2**

720

**Input Explanation**

Input consists single integer value n

**Output Explanation**

Output consist single integer value which represents factorial of n

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Test Case 1** | **Test Case 2** | **Test Case 3** | **Test Case 4** | **Test Case 5** |
| **Input** | 8 | 9 | 4 | 3 | 7 |
| **Output** | 40320 | 362880 | 24 | 6 | 5040 |

**#Solution**

#include<stdio.h>

long int fact(int n);

int main()

{

int n;

scanf("%d",&n);

printf("%ld",fact(n));

return 0;

}

long fact(int n)

{

if (n>=1)

return n\*fact(n-1);

else

return 1;

}

**1 Coding Question (10 mark)**

Q.1. Write a C program to create a student structure having fields student name and student city name. Accept the details of 'n' students, rearrange the data in alphabetical order of student name and display it.

**Sample Input 1**

2

Jiya Mumbai

Khushi Pune

**Sample Output 1**

Jiya Mumbai

Khushi Pune

**Sample Input 2**

3

Kunal Chandigarh

Brijesh Pune

Poonam Madurai

**Sample Output 2**

Brijesh Pune

Kunal Chandigarh

Poonam Madurai

**Input Explanation**

Input consists of 2 line separated values for n number students

First input consists of integer value which represents total number of students.

Second input consists of 2 space separated string values which represents student’s name and city.

**Output Explanation**

Output consists of 2 space separated values for n number of students, where student names are arranged in alphabetical order.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Test Case 1** | **Test Case 2** | **Test Case 3** | **Test Case 4** | **Test Case 5** |
| **Input** | 2  Tripti Pune  Anu Solapur | 3  Manu Raipur  Bablu Jaipur  Rohit Mumbai | 2  Rajesh Vijapur  Sahil Nagpur | 1  Khushi Chandrapur | 3  Ram Hyderabad  Pawan Tuljapur  Teju Bangalore |
| **Output** | Anu Solapur  Tripti Pune | Bablu Jaipur  Manu Raipur  Rohit Mumbai | Rajesh Vijapur  Sahil Nagpur | Khushi Chandrapur | Pawan Tuljapur  Ram Hyderabad  Teju Bangalore |

**#Solution**

#include<stdio.h>

#include<string.h>

struct stud

{

char name[50];

char city[50];

}s[100];

int main()

{

struct stud t;

int i,j,n;

scanf("%d",&n);

for(i=0;i<n;i++)

{

scanf("%s",s[i].name);

scanf("%s",s[i].city);

}

for(i=0;i<n;i++)

{

for(j=i+1;j<n;j++)

{

if(strcmp(s[i].name,s[j].name)>0)

{

t=s[i];

s[i]=s[j];

s[j]=t;

}

}

}

for(i=0;i<n;i++)

{

printf("%s %s\n",s[i].name,s[i].city);

}

return 0;

}