**FA-2**

**2nd SEMESTER**

**CSL4102-PSTC**

**Time allowed: 60 Minutes Max. Marks: 20**

**General Instructions:**

* **All Questions are mandatory**

Q. 1 TO 4(1 MARK EACH)

Q. 5 TO 7(2 MARKS EACH)

Q. 8(10 MARKS EACH)

**SECTION A**

Q.1 Choose the correct output of the following snippet ?

#include<stdio.h>

enum year{Sun, Mon, Tuesday, Wednesday};

int main(){

int i;

for (i=Sun; i<=Sun; i++)

printf("%d ", i);

return 0;

}

1. **0**
2. 0 1 2 3
3. 0 1 2 3 0

D) 0123

Q.2 Which of the following cannot be a structure member?

A) Different type of variables

B) Another structure

C) Array

**D) Function**

Q.3 Which of the following is the correct way to access union members if u is name of union variable and roll\_no is the union member?

1. **u.roll\_no**
2. u->roll\_no
3. (\*u).roll\_no
4. u\_roll\_no

Q.4 Size of union is determined by size of \_\_\_\_\_?

1. First member in union
2. Smallest member in union
3. **Biggest member in union**
4. Sum of size of individual members in union

Q.5 #include<stdio.h>

struct temp s;

struct temp{

int x;

char y;

int z;

};

int main(){

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

}

1. **12**
2. 9
3. Compile time error
4. None of these

Q.6 Predict  the output of the following code snippet?

#include<stdio.h>

int main()

{

union a{

int x;

char c[2];

};

union a u;

u.c[0]=3;

u.c[1]=2;

printf("%d, %d, %d", u.c[0], u.c[1], u.x);

return 0;

}

1. 515, 2, 3
2. 3, 2, 5
3. **3, 2, 515**
4. 515, 515, 4

Q.7 Predict the Output

#include <stdio.h>

enum days {Monday = 0, Tuesday = 1, Wednesday= 1};

int main()

{

printf("%d, %d, %d", Monday, Tuesday, Wednesday);

return 0;

}

1. **0, 1, 1**
2. Compile time error as two enum names can not have same value
3. Run Time error
4. 1, 0, 1

**SECTION B**

**BEST CUSTOMER REWARD PROBLEM**

**STATEMENT:**

At a grocery store, certain categories of products sold have been established and this information is computerized. Daily ‘n’ number of customers visit the store and purchase items. The store manager wants to reward its best customer, who has made the maximum purchase in the month of march. The discount is the amount that the customer spends on visiting the grocery store (travelling expense), in a month.Write a program to scan and to store the information in  a structure variable named ‘grocery’, that contains the members to store name of customer,(cust\_name), total number of visits(total\_visits) and monthly bill(monthly\_bill). Also write a function to display the details of best customer and discount that can be avail by customer in his next visit.

**Sample Test Case Explanation:** First line of input accepts n, i.e. number of customer, then next lines accept name of customer, total no of visits and monthly expense of each customer. The last line accepts the input for travel expense per visit of best customer.(i.e. fixed for every visit, not vary for different visits).

**INPUT:**

5 //n, number of customers.

Asha //customer name

4 //total no of visits

4000 // monthly bill

Bhushan

5

5000

Chahl

2

6000

Divya

7

5000

Ela

4

8500

700 // travel expense per visit of best customer.

**OUTPUT:**

BEST CUSTOMER: //details of best customer having maximum monthly bill.

Ela //customer name

4 //total no of visits

8500 // monthly bill

2800 //discount (travel expense per visit \* total no of visits)

**SOLUTION: // Bold text is read only stub**.

**#include<stdio.h>**

**typedef struct**

**{**

**char cust\_name[50];**

**int total\_visits;**

**int monthly\_bill;**

**}grocery;**

**void display(int,grocery[]);**

**int main()**

**{**

int i,n;

scanf("%d",&n);

grocery G[n];

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

{

scanf("%s",G[i].cust\_name);

scanf("%d",&G[i].total\_visits);

scanf("%d",&G[i].monthly\_bill);

}

display(n,G);

return 0;

}

void display(int n,grocery G[n])

{

int i, index;

int amt\_spend\_per\_visit;

int disct\_amt,final\_bill;

int max=0;

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

{

if(max<G[i].monthly\_bill)

{

max=G[i].monthly\_bill;

index=i;

}

}

scanf("%d",&amt\_spend\_per\_visit);

disct\_amt=amt\_spend\_per\_visit\*G[index].total\_visits;

//final\_bill=G[index].monthly\_bill-disct\_amt;

printf("BEST CUSTOMER:\n");

printf("%s\n",G[index].cust\_name);

printf("%d\n",G[index].total\_visits);

printf("%d\n",G[index].monthly\_bill);

printf("%d\n",disct\_amt);

}

**Test Cases:**

**Test Case 1:**

**INPUT:**

3

Arman

3

4000

Balram

5

5500

Chandra

2

6500

700

**OUTPUT:**

BEST CUSTOMER:

Chandra

2

6500

1400

**Test Case 2:**

**INPUT:**

2

sunny

30

30000

ramesh

15

45000

500

**OUTPUT:**

BEST CUSTOMER:

ramesh

15

45000

7500

**Test Case 3:**

**INPUT:**

1

Daksh

3

7250

250

**OUTPUT:**

BEST CUSTOMER:

Daksh

3

7250

750

**Test Case 4:**

**INPUT:**

7

zoo

5

5700

yatch

2

4500

waffle

3

5400

virat

10

19000

rahul

2

9000

sahil

5

15000

prerna

9

12000

210

**OUTPUT:**

BEST CUSTOMER:

virat

10

19000

2100

**Test Case 5:**

**INPUT:**

4

R

2

2500

S

8

8500

T

1

1000

U

5

5000

100

**OUTPUT:**

BEST CUSTOMER:

S

8

8500

800