**FA-4**

**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 Which of the following statements correct about the below code?

chitkara.cse.c=25;

A. Structure c is nested within structure cse.

**B. Structure cse is nested within structure chitkara.**

C. Structure chitkara is nested within structure cse.

D. Structure cse is nested within structure c

Q.2 Which of the following is efficient in terms of memory?

1. Struture
2. Enum
3. **Union**
4. None of the Above

Q.3 What will be value of each enum constants in below declaration?

enum color

{RED,GREEN,YELLOW,PINK = -2,BLUE

}c1, c2, c3;

int main()

{

printf("%d %d %d \n", RED,GREEN,PINK);

return 0;

}

1. **0 1 -2**
2. 0 1 3
3. -2 -2 -2
4. 0 -2 -2

Q.4 Which of the following is not correct?

A) Union can be nested within structure

B) Structure can be nested within union

C) Array can be part of structure

**D) Function can be part of structure**

Q.5 Choose the correct output of the following snippet (Assume int takes 2 bytes of memory)?

union student

{

int nee;

char array[10];

int lee;

};

int main()

{

printf("%d", sizeof(union student));

return 0;

}

1. **12**
2. 4
3. 5
4. 8

Q.6 What will be the size of structure date (in bytes)?

int main()

{

struct date

{

unsigned int d: 5;

unsigned int m: 4;

unsigned int y;

};

printf("%d", sizeof(struct date));}

1. **8**
2. 12
3. 4
4. 16

Q.7 Predict the output of the following code?

#include <stdio.h>

struct new1

{

int k;

};

int main()

{

struct new1 p1[] = {8, 85, 2, 56, 78};

struct new1 \*ptr = p1;

int k = (sizeof(p1) / sizeof(ptr));

if (k == 4)

printf("ENTER TO STRUCTURE PTR%d\n", ptr->k);

else

printf("ENTER TO C WORLD\n");

}

**A**) **ENTER TO C WORLD**

1. ENTER TO STRUCTURE PTR 8
2. ENTER TO STRUCTURE PTR 78
3. ENTER TO STRUCTURE PTR 0

**SECTION B**

Sachin wants to build a program to perform addition of times in hours and minutes format.

**For e.g**

**Input:**

10 20

15 45

**Output:**

2 5

**Description:** First input is 10 hours and 20 minutes and next input is 15 hours and 45 minutes. As sum of minutes is more than 60 i.e. 65 therefore 60 minutes are cut from minutes and 1 hour is added in to hours. Similarly as sum of hours are more than 24 therefore 24 hours are cut from total hours as hours can not be more than 24.

**Note:** Time is in 24 hour format i.e 00:00 to 23:59.

**Sample Input1**

10 20

15 45

**Sample Output1**

2 5

**TestCase1 Input**

11 32

11 32

**TestCase1 Output**

23 4

**TestCase2 Input**

15 2

8 6

**TestCase2 Output**

23 8

**TestCase3 Input**

15 4

15 4

**TestCase3 Output**

6 8

**TestCase4 Input**

23 4

1 5

**TestCase4 Output**

0 9

**TestCase5 Input**

11 56

14 12

**TestCase5 Output**

2 8

**CodeStub**

#include <stdio.h>

struct TIME1

{

int hours;

int mins;

};

**//Write Your Code Here**

int main() {

struct TIME1 t1,t2,t3;

scanf("%d%d%d%d",&t1.hours,&t1.mins,&t2.hours,&t2.mins);

t3 = AddTime(t1,t2);

printf("%d %d",t3.hours,t3.mins);

return 0;

}

**Solution:**

struct TIME1 AddTime(struct TIME1 t1, struct TIME1 t2)

{

struct TIME1 t3;

t3.mins =t1.mins+t2.mins;

t3.hours =t1.hours+t2.hours;

if(t3.mins>59)

{

t3.mins-=60;

t3.hours++;

}

if(t3.hours>23)

{

t3.hours= t3.hours - 24;

}

return t3;

}