Roll Number: 101903530

Thapar Institute of Engineering and Technology, Patiala

Computer Science & Engineering Department

BE 1st Year Mid Semester Test — UTA003: Computer Programming

Sep 27th , 2019 01:00 PM — Time: 02 Hours; MM: 30

Name of Faculty: GS, SES, HKG, RKR, GEK, SS, AP, RKU

Note: All questions are compulsory. Assume if any missing data. Write your group number on top of your answer sheet.

Q1: Write a program to check whether a given number is complete or not. (8)

Explanation,

Complete numbers: A positive number is said to be complete if the sum of all positive divisors of the number is equal to twice the number itself.

For example, 6 is the first positive complete number. The divisors of 6 are 1, 2, 3 and 6. Therefore, the sum of the divisors 1 + 2 + 3 + 6 = 12 is equal to 2 × 6.	Next complete number is 28. The divisors of 28 are 1, 2, 4, 7, 14 and 28. Therefore, the sum of the divisors 1 + 2 + 4 + 7 + 14 + 28 = 56 is equal to 2 × 28.

Q2: What is the code required at circle 1, 2, 3 and 4 in below mentioned program to get the desired output. (1, 1, 2, 2)

```
#include <stdio.h>
int main()
{
  int i,n,sum=[ ];        ——— 1
  printf("Input the number of terms : ");
  scanf("%d",[ ]n);       ——— 2
  printf("\n The square of natural numbers upto %d terms are: ",n);
  for(i=1;[ ];i++)        ——— 3
  {
   printf("%d ",i*i);
   sum=[ ]                ——— 4
  }
  printf("\n The Sum of Square of Natural Number upto %d terms is = %d", n, sum);
}
```

Sample Output:

Input the number of terms : 5

The square of natural numbers upto 5 terms are: 1 4 9 16 25

The Sum of Square of Natural Number upto 5 terms is = 55

P.T.O.

Q3: Write a C program to find the Largest Number among three input integer numbers using conditional operator. Also write the algorithm for the same. (3, 3)

Q4: Write the output of this code chuck with explanation (no marks will be awarded without explanation): (4)

A)	B)

int a=0,b=0,c=0;
if(a=10||b=20 &&c=30)
printf("True %d %d %d",a,b,c);
else
printf("False %d %d %d",a,b,c);
	int i = 0;
	for (; i++; printf("%d", i))
	;
	printf("%d", i);
	return 0;

Q5: Rewrite the following code (program) below using switch case (instead of if-else) carefully. (6)

It's a program to find the day of the week, given the date of month (only DD format: numeric). Assumption: is that the *first day of the month is Wednesday*. For example, (snippet below): user enters "21" and output is Tuesday

```
#include<stdio.h>
int main()
{
        int DD,day;

        printf("Enter the day of the month in DD format (date 28 for 28/3/2019): ");
        scanf("%d", &DD);
        day=DD%7;
        if (day==1)       printf("Wednesday");
        else if (day==2) printf("Thursday");
        else if (day==3) printf("Friday");
        else if (day==4) printf("Saturday");
        else if (day==5) printf("Sunday");
        else if (day==6) printf("Monday");
        else              printf("Tuesday");
        return 0;
}
```

Sample Output1:

```
Enter the day of the month in DD format (date 28 for 28/3/2019): 21
Tuesday
```

Sample Output2:

```
Enter the day of the month in DD format (date 28 for 28/3/2019): 15
Wednesday
```

P.T.O.