9/12/16

Roll No. | | | | | | | |

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TCS–101

B. Tech. (First Semester)
End Semester EXAMINATION, 2016
(All Branches)
FUNDAMENTAL OF COMPUTER AND INTRODUCTION TO 'C' PROGRAMMING

Time : Three Hours] [*Maximum Marks : 100*

Note : (i) This question paper contains five questions.

(ii) All questions are compulsory.

(iii) Instructions on how to attempt a question are mentioned against it.

(iv) Total marks assigned to each question are **twenty.**

1. Attempt any *two* questions of choice from (a), (b) and (c). (2×10=20 Marks)

(a) Convert the following : 2×5=10

(i) $(11011.001)_2 = (\ )_{10}$

(ii) $(A\,4\,D\,31)_{16} = (\ )_{10}$

(iii) $(237.25)_8 = (\ )_{10}$

(iv) $(734)_8 = (\ )_{16}$

(v) $(125.34)_{10} = (\ )_3$

(b) Draw a flowchart to find smallest four numbers. 10

(c) Write a program to input number of days and convert it into year, month, week and days. Consider : 1 year = 365 days, 1 month = 30 days, 1 week = 7 days

Example :

Input (Number of Days) : 500

Output : 1 Year, 4 Months, 2Weeks, 1 Day. 10

2. Attempt any *two* questions of choice from (a), (b) and (c). (2×10=20 Marks)

(a) What is the role of input device in computer system ? List various input devices. Explain working of keyboard. Also explain various keys of keyboard. 10

(b) Draw a flowchart to count first n odd numbers. 10

(c) Input a number and write a menu driven program in 'C' to perform the following operations using switch case : 10

(i) Check whether inputted number is Even or Odd.

(ii) Check whether inputted number is Positive, Negative or Zero.

3. Attempt any *two* questions of choice from (a), (b) and (c). (2×10=20 Marks)

(a) What is Operating System ? What are the various functions of Operating System ? Differentiate GUI *vs.* CUI. 10

(b) Explain various Looping Construct in 'C' with example. What do you mean by Entry Controlled Loop and Exit Controlled Loop ? Explain with suitable example. 10

(c) Write a 'C' program to generate the following pattern : 10

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

4. Attempt any *two* questions of choice from (a), (b) and (c). (2×10=20 Marks)

(a) What is Computer Network ? Explain various types of network and topologies. Differentiate Internet and Intranet.

(b) Find output of the following codes : $2\frac{1}{2}\times4=10$

(i)
```
int main( )
{
int n = 15, sum = 0;
```

```
for (; ;)
{
   sum + = n;
   if(sum > 100)
   break;
   printf("%d", sum);
   }
   return 0;
}
```

(ii)
```
int main( )
{
   int i = 1;
   while(i < 10)
   {
      if (i == 3)
      continue;
      printf("%d", i);
      i ++;
   }
   return 0;
}
```

(iii)
```
int main( )
{
char ch = 'A';
```



```
   switch(ch)
   {
      case 'A';
      case 'B': ch++;
      case 'C': ch++;
      }
      printf("%d", ch);
      return 0;
   }
```

(iv)
```
int main( )
{
   int a = 0;
   if (a = 0)
   printf("Good Morning");
   else
   printf("Good Night");
   return 0;
}
```

(c) Write a 'C' program to input a multi digit number and print it into words : 10

Example :

Input : 157

Output : One Five Seven

5. Attempt any *two* questions of choice from (a), (b) and (c). (2×10=20 Marks)

(a) Explain memory hierarchy. Compare Primary and Secondary memory. Explain, how read/write operation in performed in optical disk. 10

(b) (i) Explain ternary and bitwise operator. 4

(ii) int main( ) 3

```
{
   int a, b, c, d;
   a=b=c=d=4;
   a*=b+1;
   c+=d*=3;
   printf("%d%d", a, c);
   return 0;
}
```

(iii) int main( ) 3

```
{
   int x, y, z, k=10;
   k + = (x=5, y=x+2, z=x+y);
   printf("%d %d %d %d", x, y, z, k);
   return 0;
}
```

(c) Write a 'C' program to calculate sum of the following series : 10

1! + 2! + 3! + 4! + 5! + ... upto n!