KL UNIVERSITY
I/IV –B.Tech-I-Semester –Internal Examinations-JULY-2017
Test-1
17CS1101-PROBLEM SOLVING AND COMPUTER PROGRAMMING

1.(a) The policy followed by a company to process customer orders is given by the following
  rules:
  (i) If a customer order is less than or equal to that in stock and his credit is OK , Supply
  his requirements.
  (ii)If his credit is not OK do not supply. Send him intimation.
  (iii)If the credit is OK but the item in stock is less than his order, supply what is in stock.
  Draw the flowchart to implement the company policy.
(b).Write the necessary scanf or printf statements for each of the following situations.
   (i) Generate the message
   Please enter your name:
  Then enter the name on the same line:
   (ii) Suppose that x1 and x2 are floating point variable whose values are 8.0 and -2.5
respectively. Display the values of x1 and x2 with appropriate labels: ie., generate the message as
the value of x1=8.0 the value of x2=-2.5.

   (iii) Write a program to enter two numbers and carry out modular division operation by
2,3 and 4 and display their remainders.

(or)

2.(a).There are 2673 dresses are available in an outlet with five different colors such as Red,
Blue, Green. Yellow and White .Draw a flowchart to find out number of dresses for each
color.(hint: iterative process).

(b) Determine which of the following are valid identifiers. If invalid ,explain why.
   (i)record1   (V)$tax   (viii)name_and_address
   (ii)1record   (vi)name   (ix)name-and-address
   (iii)file_3   (vii)name and address   (x)123-45-6789
   (iv)return
(c). Write a program to enter two numbers. Make a comparison between them with a conditional
operator. If the first number is greater than the second perform multiplication otherwise division
operation.

3.(a) The cost to paint is Rs.4.75 per one feet. Write a c program to calculate total cost to paint a
room which is in circle shape with radius 126.78cm(Hint :30.48cm=1 feet)

(b) Predict the output for the following code:

```
main()
{
int i;
float f;
double d;
long l;
i=l=f=d=100/3;
printf("%d%ld%f%lf\n",i,l,f,d);
f=i=d=l=100/3;
printf("%f%d%lf%ld\n",f,i,d,l);
l=i=d=f=100/3;
printf("%ld%d%lf%f\n",l,i,d,f);
d=l=f=i=100/3;
printf("%lf%ld%f%d\n",d,l,f,i);
}
```

(c) .Write a C Program that reads a floating point number having precision as 2 and then displays right most digit of the integral part of the number?

EX:
Input:123.45
Ouput:3

4.a The air force has asked to write an algorithm to label supersonic aircraft as military or civilian. Your algorithm is to be given the plane's observed speed in km/h and its estimated length in meters. For planes travelling in excess of 1100km/h, you will label those longer than 52 meters "civilian" and shorter aircraft as "military". For planes travelling at slower speeds, you will issue an "aircraft type unknown "message.

(b) Determine which of the following are valid constants.

(i)   "ABC"

(ii)   "#"

(iii)   Abc

(iv)   1,234

(v)   -22.124

(vi)   1.23E-2.0

(vii)   0x2AG

(viii)   0x23

© Write a c program to check whether the nth bit of a given number is set or not. The value of n will be entered by the user. Assume that the bit numbering starts from 0.

5. (a) A carpenter is paid a contract Rs 2000.00 for 3 days work. He hires 3 workers who work for 3 days at Rs75.00 a day: Calculate and print the amount of money paid to each worker: The total amount paid to all workers and the amount the carpenter is left with. Develop a flowchart for it.

(b)Show the exact form of the output displayed when x is 3.456

Printf("three values of x are %4.1f\n %5.2f\n %7.3f\n");

© Write a program that takes the length and width of a rectangular yard and the length and width of a rectangular house situated in the yard. Write a C program to calculate the time required to cut the grass at the rate of 2 sq.foot per sec.

6a. Write an algorithm/flowchart to the following:

Assume that imported goods from foreign countries are classified into 4 categories for imposing customs duty.

Category   % of customs duty on value of goods

   1   10
   2   15
   3   17.5
   4   25

Draw a flowchart for computing customs duty for a given category based on value of good.

6.b. Identify and correct the errors in each of the following statements:

1. int a=10, int b=20;

2. int a=10, float b=2.3;

3. int a=23u, b=2f;

4. const int number=100;

   Number=500;

5. printf(1,2,3);

6. printf("To err is human");

7. printf("%d%d",no1,no2);

8. printf("humans learn by making mistakes");

6.c. Given a four-digit number, write a program that displays the number as follows:

First line: All four digits

Second line: All except last digit

Third line: All except last 2 digits

Last line: The first digit

For eg: The number should be displayed as

5 6   7 8

5 6   7

5 6

5