 <p>SASTRA ENGINEERING · MANAGEMENT · LAW · SCIENCES · HUMANITIES · EDUCATION DEEMED TO BE UNIVERSITY (U/S 3 OF THE UGC ACT, 1956)</p>	<p align="center">School of Computing Assignment - I</p> <p>Course Code : CSE101 Course Name : Problem Solving and Programming in C Year & Programme : I Year - I Sem (Semi Theory) Deadline for Submission : 09.11.22</p>
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1. Identify the valid and invalid identifiers from the list below.

1styear
tax_rate
student-no
temperature

2. Identify the errors in the following code segment

```
char ch1= 'C',ch2= 'A';
int i=65,a,c;
float b=97;
a=ch1%ch2;
c=i%b;
```

3. What input is required in the following program to produce the output shown below?

Output:

ch1=a ch2=b ch3=c

```
#include<stdio.h>
void main()
{
char ch1,ch2,ch3;
scanf("%cy%cy%c",&ch1,&ch2,&ch3);
printf("ch1=%c ch2=%c ch3=%c",ch1,ch2,ch3);
}
```

4. Fill the appropriate statements in the following program to get the output shown below.

Output:

1 3 5 6 7

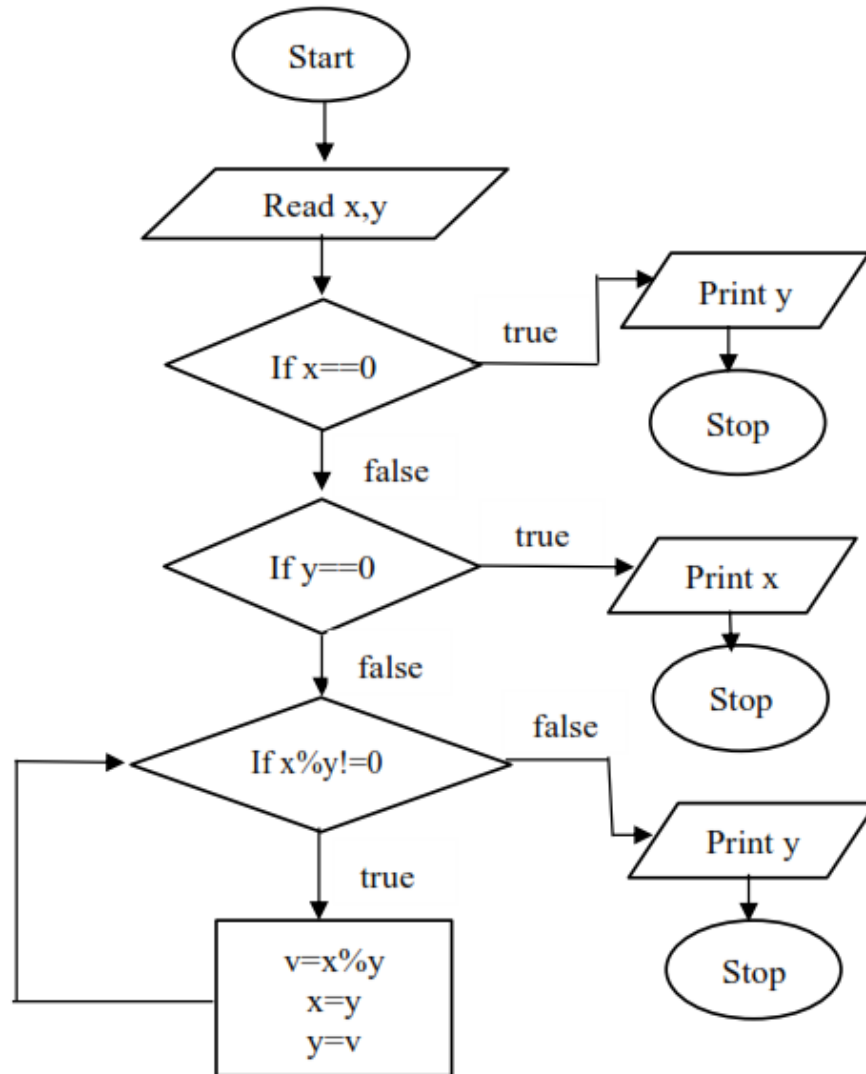
```
#include<stdio.h>
void main()
{ int i=1;
for(i<10;i++)
{
if(i==2||i==4)
-----//statement1
printf("%d ",i);
if(i==7)
-----//statement2
}}
}
```

5. What value should be entered into the second printf statement in the following program to get the output in the format shown below?

Output:

```
#include<stdio.h>
void main()
{ char str[]="Sastra University";
printf("%17s\n",str);
printf("%__s",str);
}
```

6. Write a C program for the following flowchart, then find the output for $x=49$, y =your registration number's last two digits.



7. Write a C code to test whether the given number is a power of 2 or not.

Eg. $32 = 2^5$; output = 32 is a power of 2
24 output = 24 is not a power of 2

8. Explain the relational and logical operators in C

9. Draw a flowchart and write a C program for displaying employee details.
Get employeeID, age, salary and find DA, HRA, PF based on following condition.

Salary greater than or equal to 50000: DA – 3%, HRA – 5%, PF – 7%

Salary less than 50000 and greater than or equal to 20000

: DA – 5%, HRA – 9%, PF – 6%

Salary less than 20000

: DA – 7%, HRA – 95%, PF – 5%

Display employee detail and also find the gross salary (salary + DA + HRA) and
netsalary (gross salary-PF).

10. Write a C program to evaluate the following series

$$\text{Sum} = 1 + \frac{2}{2} + \frac{3}{3} + \frac{5}{5} + \frac{8}{7} + \frac{13}{11} + \frac{21}{13} + \frac{34}{17} + \frac{55}{19} + \frac{89}{23} + \frac{144}{29} + \dots + \frac{x}{n}$$

Sample Input:

Enter the value of N: 30

Output:

Sum=21.669880
