No.

AJAY KUMAR GARG ENGINEERING COLLEGE, GHAZIABAD
DEPARTMENT OF INFORMATION TECHNOLOGY

Sessional Test 2

Program: B.Tech
Session: 2024-25
Subject: PPS
Max. Marks: 50

Semester: II
Section: S-11 to S-20
Subject Code: BCS-201
Time: 2 Hours

OBE Remarks:

Q.No	1	2	3	4	5	6	7	8	9	10	11	12
CO No.	CO2	CO2	CO3	CO3	CO3	CO2	CO2	CO2	CO3	CO3	CO2	CO3
Bloom's Level* (L1 to L6)	L2	L4	L2	L4	L1	L1	L2, L3	L2, L3	L2, L3	L6	L2, L3	L2, L3
Weightage CO2: 26.5							**Weightage CO3: 23.5**					

**Bloom's Level: L1: Remember, L2: Understand, L3: Apply, L4: Analyze, L5: Evaluate, L6: Create*

Note: Answer **all** the sections with all the questions

(2*5=10)

Section-A

1. Describe the syntax and working of the typecasting operator.
2. If int a=2, b=3, x=0; Find the value of x= (++a, b+=a).
3. Differentiate between structure and array.
4. Write down the output of the following.

```
int main()
{
        int i=1;
        for( ; ; )
        {
          printf("%d",i);
          if(i= =7)
          break;
        }
}
```

5. Briefly explain the purpose of break and continue statements in programming, with syntax.

(5*5=25)

Section-B

6. Explain Logical, Unary and Bitwise operators in detail.
7. Explain operator precedence and associativity in C with suitable examples. Write a C program to take three integers as input and find the greatest number among them using only conditional (if-else) statements.
8. Explain if, if-else, nested if-else and if-else ladder. Write a program to check entered year is leap year or not with conditional operator.
9. Differentiate between while and do-while loops in C with at least two key points. Then, write a C program to print all prime numbers between 1 and n, where n is a user-input value.

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10. Write a program in C to print the following pattern:

```
2 3 4 5 6 7
3 4 5 6 7
4 5 6 7
5 6 7
6 7
7
```

Section-C

(7.5*2=15)

11. Explain the use of the switch statement in C, including its syntax and working. Write a C program that accepts marks (between 0 and 100) from the user and prints the corresponding grade using a switch statement. Use the following grading criteria:
    90–100: Grade A => 90<
    70–89: Grade B
    60–69: Grade C
    40–59: Grade D
    Below 40: Fail
12. Explain various types of array with their declaration and initialization. Write a program in C to input two 3x3 matrix from the user and print multiplication result in matrix form.

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