PABSON
SEE PRE-BOARD EXAMINATION-2081

Subject: Opt II (Computer Science) **Full Marks: 50**
Class: 10 **Time: 2 hrs.**

Attempt all questions

1. **Answer the following questions in one sentence:**

    a. Write the different architecture of computer network.
    ⇒

    b. What is Cyber bullying?
    ⇒

    c. Write any two services provided by the Internet.
    ⇒

    d. Which query is used to make changes to the data present in the database?
    ⇒

    e. What is Primary key ?
    ⇒

    f. Write any two types of operators used in C language ?
    ⇒

2. **Write appropriate technical term for the following:**

    a. Law that governs the legal issues of cyberspace.
    ⇒

    b. The website that searches documents for specific keywords on the Internet.
    ⇒

3. **Write the full form of the following:**
    a. **POP** ⇒

    b. **ISP** ⇒

4. **Answer the following questions:**

   a. **Differentiate between LAN and MAN.**
   ⇒

   b. **What is network topology? Write about star topology with a suitable diagram.**
   ⇒

   c. **Write any four opportunities and threats in social media?**
   ⇒

   d. **What is online payment? Write the different forms of e-payment in Nepal.**
   ⇒

   e. **What is cloud computing? What are the services provided by cloud computing?**
   ⇒

   f. **Define Data and information.**
   ⇒

   g. **What is MS-Access? Write the features of MS-Access.**
   ⇒

   h. **Define action query.**
   ⇒

   i. **What is a table? Write the basic components of the table.**
   ⇒

5. **Write down the output of the given program. Show with a dry run table.**

OUTPUT : PABSON

```
DECLARE SUB TEST(A$)

CLS
A$ = "PABSON"
CALL TEST(A$)
END

SUB TEST (A$)

   FOR I = 1 TO LEN(A$)
      B$ = MID$(A$, I, 1)
      C$ = C$ + B$
   NEXT I

   PRINT C$

END SUB
```

6. **Rewrite the given program after correcting the bugs:**

```
CLS
OPEN "marks.dat" FOR OUTPUT AS #1

WHILE NOT EOF(2)

   INPUT #1, N$, ENG, NEP, SCI
   ENG + NEP + SCI = TOT
   IF TOT > 35 THEN PRINT N$, ENG, NEP, SCI

NEXT

CLOSE #1
END
```

Re written program after the correction of bugs:

```
CLS
OPEN "marks.dat" FOR INPUT AS #1

WHILE NOT EOF(1)

   INPUT #1, N$, ENG, NEP, SCI
   IF ENG > 35 THEN PRINT N$, ENG, NEP, SCI

WEND

CLOSE #1
END
```

7. **Study the following program and answer the given question:**

```
DECLARE FUNCTION GRADE(A)

CLS
INPUT "ENTER A NUMBER"; B
C = GRADE(B)
PRINT C
END

FUNCTION GRADE (X)

  WHILE X <> 0
     R = X MOD 10
     Z = Z + R
     X = INT(X / 10)
  WEND

END FUNCTION
```

a. **How many parameters are used in the above program?**
⇒

b. **List the different library functions used in the program.**
⇒

8. **Convert / calculate as per the instruction:**

a. $(111)_{10}$ into (Binary)
⇒

b. $(212)_{8}$ into (Binary)
⇒

c. 11001 + 10101
⇒

d. 100101 ÷ 1100
⇒

9. **a. Write a program in Qbasic that asks to enter three different numbers then find out product and average. Create a user defined function PROD() to calculate product and sub procedure AVG() to calculate average.**
⇒

```
DECLARE FUNCTION PROD(A, B, C)
DECLARE SUB AVG(A, B, C)

CLS

INPUT "Enter three different numbers: "; A, B, C

P = PROD(A, B, C)
PRINT "Product = "; P

CALL AVG(A, B, C)

END

FUNCTION PROD (A, B, C)
   PROD = A * B * C
END FUNCTION

SUB AVG (A, B, C)
   Average = (A + B + C) / 3
   PRINT "Average = "; Average
END SUB
```

b. A sequential data file called "data.dat" has stored data under the field heading item name, quantity and rate. Write a program to display all the records with total.

⇒

```
CLS
OPEN "data.dat" FOR INPUT AS #1

DO WHILE NOT EOF(1)

   INPUT #1, name$, quantity, rate
   Total = quantity * rate
   PRINT name$, quantity, rate, Total

LOOP

CLOSE #1
END
```

10. a. Write a program in C language to ask to enter a number then find out whether it is even or odd.

⇒

```
#include <stdio.h>
#include <conio.h>

int main()
{
        int number;

        printf("Enter a number: ");
        scanf("%d", &number);

        if (number % 2 == 0)
        {
                printf("%d is even.\n", number);
        }
        else
        {
                printf("%d is odd.\n", number);
         }

        getch();
        return 0;
}
```

b. Write a C program to display the series 1,4,9, …. upto 10th term.

⇒

```
#include <stdio.h>
#include <conio.h>
// #include <math.h>

int main()
{
	int i;

	for(i = 1; i <= 10; i++)
	{
		printf("%d ", i * i);

		// Alternative: printf("%d ", (int)pow(i, 2));
	}

	getch();
	return 0;
}
```