SOLVED NATIONAL PABSAN KATHMANDU

Pre-Qualifying Exam – 2081
 Class: X
 FM: 50
 Subject: Sub-Opt. Computer Science
 Time: 2 hrs.
 PM: 17.5

Group "A" [10 Marks]

1. Answer the following questions in one sentence: (6×1=6)

a) Define computer network.
 b) What is search engine?
 c) What is tuple in database?
 d) Give name of any two RDBMS software.
 e) Define local variable.
 f) Write down any two features of C programming language.

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2. Write the appropriate technical terms for the following: (2×1=2)

a) Networking devices used to regenerate the signal and transfer further.
 b) Online postal service, E-mail.

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3. Write the full forms: (2×1=2)

i. SIM
 ii. NOS

Group "B" [24 Marks]

4. Answer the following questions: (9×2=18)

a) What are the two advantages of ring topology over bus topology?
 b) Define hardware security. Write the importance of power protection device to protect the computer.
 c) What do you mean by Digital Citizenship? List its two advantages.
 d) Define e-commerce. Give example of any two commercial sites in Nepal.
 e) List any two threats of using social media.
 f) Define Form and Report.
 g) Write down the advantages of database management system over traditional data storage system.
 h) What is the difference of 'Allow Zero length' and 'Required' field properties of MS-Access?
 i) Define Query. List out its types.

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5. Write the output of the following program. (2)

```
DECLARE SUB series ()
CALL series
END

SUB series ()
  i = 3
  FOR c = 1 TO 5
    PRINT i * c^2;
  NEXT c
END SUB
```

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6. Re-write the given program after correcting the bugs. (2)

REM to find the factorial of a given number

```
DECLARE FUNCTION FACTO (N)
CLS
INPUT "Enter a number"; N
PRINT FACTO(N)
END

FUNCTION FACTO(N)
  F = 1
```

```
    WHILE N <> 0
      F = F * N
      N = N - 1
    WEND
    FACTO = F
END FUNCTION
```

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7. Study the given program and answer the given questions. (2)

```
DECLARE SUB SUM(N)
CLS
INPUT "Enter any number"; N
CALL SUM(N)
END

SUB SUM(N)
  WHILE N > 0
    R = N MOD 10
    T = T + R
    N = N \ 10
  WEND
  PRINT "The Sum of individual digit is"; T
END SUB
```

Questions:
 a) How many parameter(s) is used in the above program? List them.
 b) Write the use of MOD in above program.

Group "C" [16 Marks]

8. Convert/Calculate the following as per instructions: (4×1=4)

i) $(9876)_{10}$ into Binary

ii) $(2081)_{16}$ into Octal
iii) $(11010)_2 + (10110)_2$
iv) $(101110)_2 \div (101)_2$

9.

a) Write a program to calculate area of a circle using **SUB… END SUB** and perimeter of rectangle using **FUNCTION… END FUNCTION**. (4)

b) A sequential file **"detail.dat"** contains Name, Age and mobile number of few persons. Write a QBASIC program to display the name of those persons who are eligible to cast the vote. [Age must be 18 or above to cast vote]. (4)

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10. Write a C program to test whether the given number is exactly divisible by 13 or not. (4)