SEE Pre-final Exam – 2081 LMV Computer Science Time: 2 hrs. | Full Marks: 50

समूह 'क' (१० अंक) | Group 'A' (10 Marks)

१ तलका प्रश्नहरूको एक वाक्यमा उत्तर दिनुहोस्। (६×१=६) **Answer the following questions in one sentence: (6×1=6)**

a. नेटवर्क टोपोलोजी भनेको के हो? **(What is Network topology?)**

b. ई-वालेट भन्नाले के बुझिन्छ? **(What is meant by E-wallet?)**

c. क्लाउड कम्प्युटिंगको एउटा उदाहरण उल्लेख गर्नुहोस्। **(Mention one example of Cloud Computing.)**

d. **DBMS** मा **Primary Key** किन प्रयोग गरिन्छ? **(Why is Primary Key used in DBMS?)**

e. **MS-Access** मा **Hyperlink data type** ले कस्तो डाटा संग्रह गर्छ? **(What type of data does the Hyperlink data type store in MS-Access?)**

f. **C** भाषामा प्रयोग गरिने दुई हेडर फाइलहरू लेख्नुहोस्। **(Write two header files used in C Language)**

२ उपयुक्त प्राविधिक शब्द लेख्नुहोस्। (२×१=२) **Write appropriate technical terms: (2×1=2)**

a. नेटवर्कमा जडित सबै नोडहरूमा डाटा प्याकेट प्रसारण गर्ने उपकरणलाई के भनिन्छ? **(It broadcast data packets to all the connected nodes in the network.)**

b. *एन्क्रिप्शन प्रविधि द्वारा जानकारी लुकाउने गोप्य लेख/पाठलाई के भनिन्छ?* **(*A secret text that hides information through encryption.*)**

३ निम्नको पूरा रूप लेख्नुहोस्। (२×१=२) **Write the full forms: (2×1=2)**

a. **FTP**

b. **SaaS**

समूह 'ख' (२४ अंक) | Group 'B' (24 Marks)

४ तलका प्रश्नहरूको उत्तर दिनुहोस्। (९×२=१८) **Answer the following questions: (9×2=18)**

a. **Guided** र **Unguided Media** बीच दुई फरक लेख्नुहोस् उदाहरण सहित। **(Write two differences between Guided and Unguided Media with example.)**

b. साइबर नैतिकता के हो? यसका कुनै दुई उदाहरण लेख्नुहोस्। **(What is Cyber ethics? Write any two examples.)**

c. एआई) कृत्रिम बुद्धिमत्ता (के हो? एआईको जिम्मेवार प्रयोगको व्याख्या गर्नुहोस्। **(What is AI? Explain responsible use of AI.)**

d. ई-कमर्सका प्रकारहरू सूचीबद्ध गर्नुहोस्। **B2B** मोडेललाई संक्षेपमा व्याख्या गर्नुहोस् र चित्र सहित प्रस्तुत गर्नुहोस्।

List the types of E-commerce. Briefly explain the B2B model with the diagram.

e. सूचना सुरक्षा के हो? दुई महत्त्वपूर्ण हार्डवेयर सुरक्षा उपायहरू लेख्नुहोस्। **(What is information security? Write two important hardware security measures.)**

f. **DBMS** के हो? यसका दुई वटा लाभ लेख्नुहोस्। **(What is DBMS? Write its two advantages.)**

g. **Sorting** के हो? **DBMS** मा यसको महत्त्व लेख्नुहोस्। **(What is sorting? Write its importance in DBMS.)**

h. **Primary Key** र **Foreign Key** बीचको दुई फरक लेख्नुहोस्। **(Write two differences between Primary Key and Foreign Key.)**

i. **Query** भनेको के हो? **Query object** किन महत्त्वपूर्ण छ? **(What is query? Why is the Query object important?)**

५ तलको प्रोग्रामको आउटपुट ड्राइ रन सहित लेख्नुहोस्। (१×२=२) **Write the output of the following program with a dry run: (1×2=2)**

```
DECLARE SUB SERIES ()
CLS
 CALL SERIES
END
SUB SERIES
 A=1
FOR I=1 TO 5
  IF I MOD 2 = 1 THEN
        PRINT A;
        A=A*10+1
  END IF
NEXT I
END SUB
```

६. निम्न प्रोग्राम **Debug** गरी पुनः लेख्नुहोस्। (१×२=२) **Rewrite the following program by debugging it: (1×2=2)**

```
REM add some more record on a sequential data file "emp.dat"
CLS
OPEN "emp.dat" FOR INPUT AS #1
```

```
TOP:
INPUT "ENTER NAME, DEPARTMENT, POST AND SALARY"; N, D, P and SAL
INPUT #2, N$, D$, P$, SL$
INPUT "DO YOU WANT TO ADD MORE RECORD? (Y/N)"; AN$
IF UCASE (ANS$) = "Y" THEN GOTO UP
CLOSE
END
```

७. तलको प्रोग्राम अध्ययन गरी प्रश्नहरूको उत्तर दिनुहोस्। (१×२=२) Study the following program and answer the questions: (1×2=2)

```
DECLARE FUNCTION Test(N)
CLS
INPUT "Enter any number"; Y
PRINT "Result="; Test(Y)
END
FUNCTION Test(N)
IF N MOD 2 = 0 THEN Test = "POSITIVE" ELSE Test = "NEGATIVE"
END FUNCTION
```

a) Actual र Formal parameters पहिचान गर्नुहोस्। (Identify the Actual and Formal parameters.)

b) माथि दिएको प्रोग्राममा MOD ऑपरेटर कसरी काम गर्छ? (How MOD Operator Works in above program?)

समूह 'ग' (१६ अंक) | Group 'C' (16 Marks)

८. निर्देशन अनुसार रूपान्तरण/गणना गर्नुहोस्। (४×१=४) Convert/Calculate as per the instructions: (4×1=4)

a. $(11010)_2 = (?)_{10}$
b. $(2AF)_{16} = (?)_8$
c. $1001_2 \times 101_2 - 11_2$
d. $1001001_2 \div 11001_2$

९. प्रोग्रामिङ प्रश्नहरू: (३×४=१२) Programming Questions: (3×4=12)

a. **Write a program in Qbasic that ask the radius and height of a cylinder then calculate its volume and Total surface area. Create a user-defined function to**

calculate volume and sub procedure to calculate total surface area of a cylinder. [hint: : $V = \pi r^2 h$, $A = 2\pi r(r+h)$]

b. Write a QBASIC program to display details of students scoring 35 or above in English, Math, and Science from the sequential file "student.dat".

c. Write the following program using C language:
Write a program to input cost price and selling price of an item and calculate 7.5 % discount on the item if its selling price is greater than 10000 otherwise 3 % discount on the item then display the selling price after discount.

OR

1 देखि **10** सम्मका संख्याको वर्गको योग प्रदर्शन गर्ने प्रोग्राम लेख्नुहोस्। **(Write a program to display the sum of squares of numbers from 1 to 10.)**

Candidates are required to answer in their own words as far as practicable. Credit will be given to originality, not rote learning.

Attempt ALL the questions.

LMV SEE FINAL EXAMINATION 2080

SUBJECT – OPT II. COMPUTER FM: 50 PM 20 TIME: 1.5 HRS

Group –A

Very Short Answer Types Questions. (10 Marks)

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

a) Define network topology.
b) What is digital footprint?
c) What is the default type of numeric data type in ms access?
d) Define validation text.
e) Write the function of INPUT # and EOF.
f) Write the name of any two header files used in 'C' language.

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

a) A cable that transmits light signals.
b) The set of services delivered to public/citizen from its government via digital medial often using Internet.

3. Write the full forms of the following: (2×1=2)

a. EFT b. VSAT

Group –B

Short Answer Types Questions. (24 Marks)

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

a) Write any two advantages and disadvantages of Bus topology? Also draw the model.
b) What is AI? Write advantages and disadvantages of it.
c) Explain cyber bullying and plagiarism in short.
d) What is computer security? Write two ways of protecting computer software as well as computer hardware.
e) What is e-commerce? Write any two disadvantages of ecommerce.
f) Difference between database and DBMS.
g) What is action Query? Explain any one type of action query.
h) What is referential integrity? Write its importance.
i) What is form? Write benefits of using form object over table object.

5. Write down the output of the given program. Show with a dry run in the table. (2)

```
DECLARE SUB display (a$)
CLS
X$=”NEPALI”
CALL display (X$)
END

SUB display (a$)
  FOR P= 1 TO (LEN(a$)/2)

       G$=MID$(a$,P,P+1)
     PRINT G$
  NEXT P
```

END SUB

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

```
CLS
REM program to display all female students' records only
OPEN "student.txt" FOR OUTPUT AS #2
DO WHILE EOF (1)
INPUT 5, n$, c, g$
IF g$="male" THEN PRINT n$, c, g$
WEND
END #2
```

7. Study the following program and answer the given questions: (2×1=2)

```
DECLARE FUNCTION avn (n)
CLS
FOR c = 1 TO 5
READ num
PRINT avn (num)
NEXT c
DATA 1, 3, 2,5,4
END

FUNCTION avn (n)
s = 0
FOR g = 1 TO 5
s = s + n^2
NEXT g
avn = s
END FUNCTION
```

a) Write the value that is returned by the function avn ().
b) List the argument and parameter used in above program.

Group –C
Long Answer Types Questions (16 Marks)

8. Convert / Calculate as per the instruction:

a) Convert the following as instructed. (2×1=2)

i) $(B4B)_{16}$ into Decimal Number ii) $(456)_8$ into Hexadecimal

b) Perform the following binary calculations. (2×1=2)

i) (10110)× (110) -(1101) ii) Divide (1101010) by (101)

9. Write a program. (4x3=12)

a) Write a program in QBASIC that allows user to enter principal, time and rate of interest. Create a user defined function to calculate simple interest and define a sub procedure to calculate compounded interest. [SI=PTR/100, $CI=P(1+R/100)^T-P$].

b) A sequential data file called "record.txt" has stored data under the fields Roll No., Name, Gender, English, Nepali, Maths and Computer. Write a program to display all the records of those students who failed the exam and also count the number of failed students.

c) Write a program to determine if a given number is positive, negative, or zero.

OR

Write a 'C' program to display the series:

4578 457 45 4

LMV SEE MODEL -2078 FINAL EXAM -2078 Opt II Computer Science time: 1.5 HRS

Attempt all the questions.

Group 'A' 10 x 1 =10

Very short questions.

1) Give answer in one sentence for the following question. 6 x1 ■6

a. Define bandwidth.

b. What is cyber ethics?

c. What is Al?

d. What is the storage size of memo and text data type in MS- Access?

e. What is global variable?

f. List four arithmetic operator in C language.

2) Write appropriate technical terms for the following. 2x1

a) Secret group of characters which helps to protect file from unauthorized person

b) A type of network in which every computer works as both client and server.

3) Write the full forms of the following. 2x1

i) SMTP ii) TCP/IP

Group 'B' 12 x 2

4. Answer the following questions- 9 x2 =18

a. Differentiate between star topology and ring topology.

b. Write any four commandments of computer ethics.

c. What is information security? Explain any two security measures.

d. What are advantages of cloud computing?

e. What is VR? Mention its application areas.

f. What is data type in MS access? Write any four examples.

g. Define primary key. Write its uses.

h. What is query? List its type.

i. What is report? Write its advantage.

5. Write down the output with dry run table. [2]

```
DECLARE SUB SHOW(S)
CLS
T=5
CALL SHOW (T)
END
SUB SHOW (S)
  FOR I = 1 TO 4
     PRINT S;
     IF S MOD 2 = 0 THEN
        S = S/2
     ELSE
        S=S*2 + 1
     END IF
   NEXT I
END SHOW
```

6. Re-write the given program after correcting the bugs. [2]

```
REM to add more records in a sequential file.
OPEN "EMP.DAT" FOR INPUT AS #1
DO
INPUT "Enter name "; N$
INPUT "Enter address"; A$
INPUT "Enter salary"; sal$
WRITE #2, N$, A$, SAL$
INPUT "DO YOU WANT TO ADD MORE RECORDS "; K$
LOOP WHILE LCASE (K$)="Y"
END
```

7) Study the given program and answer the given questions.[2]

```
DECLARE FUNCTION check$ (w$)
CIS
INPUT "ENTER ANY WORD', T$
PRINT check$ (T$)
END
FUNCTION check (w$)
FOR M = LEN(w$) TO 1 STEP -1
C$= C$ +  MIDS(w$,M,1)
NEXT M
Check$= C$
END FUNCTION
```

a) List the formal and actual parameters used.
b) In the above program, List the library function used in above program

Group 'C' 4 x4

8. Convert and Calculate as per the Instruction, 4x1
a. $(CBA)_{16}$ to binary b. $(654)_{10}$ to $(?)_{16}$ c. $(l\ 1111011100)_2$ to $(?)_8$ d. (10011 - 1110) to (?)

9) Write a program that allows user to enter radius of a circle. Create a user defined function to find the area of circle and sub procedure to find circumference Hint: [$A=R^2$, C = 2 * 22/7*R)

10. A sequential data file "salary.dat" contains employee's name, address, gender and salary. WAP to display all the information of employees whose salary is less than to 35 and lives in Pokhara.

11) Write a Program using C language to input any two numbers and find smaller number

OR

Write a program in C language that check whether the number is Odd or even.

.

LALITPUR MADHYAMIK VIDYALAYA

Class: X **Final Term Exam -2079** **F.M.: 50**
Time: 1.5 hrs. **Opt II (Computer Science)** **P.M.: 20**

Group 'A'

1. Answer the following questions in one sentence:

a) What is social media?
b) What is digital footprint?
c) What is the size of Lookup wizard data type in MS-Access?
d) Which data type is used to store photo in MS-Access?
e) What is parameter and argument?
f) Write name of any two header files included in C language.

2. Write appropriate technical term for the following:

a) The authentication system that uses individual physical or behavioral traits.
b) The devices that are embedded with Internet connectivity, sensors, and other hardware that allow communication and control via the web.

3. Write the full form of the following.

a) DNS b) DDoS

4. Answer to the following questions:

a) What is cloud computing? Write any two advantages.
b) What are software threats? Write any two security measures for software threat.
c) What is digital citizenship? Write its two importance.
d) What is virtual reality? Write any two areas where virtual reality are used.
e) What is cryptography? Write components of cryptography.
f) What is RDBMS? Name any four data types of MS Access.
g) What are validation text and validation rule?
h) What is form? Write any two advantages of using form.
i) What is record? Why is primary key necessary in record?

5. Write down the output of the given program:

```
DECLARE SUB Series (A)
CLS
A=12134
CALL Series (A)
END
SUB Series(A)
FOR K=1 to 4
IF A MOD 2 <> 0 PRINTA;
A=A\10
NEXT K
END SUB
```

6. Re-Write the given program after correcting the bugs:

```
REM  To store name and age in a sequential data file ABC.TXT
OPEN “ABC.TXT” FOR INPTUT AS#1.1
CLS
KK:
INPUT "Enter name";N
INPUT "Enter age";A
WRITE 1,N$,A
INPUT “Want to add more records”; ans $
If ans $=”Y” and ans $=”y” then
CLOSE #1
END
```

7. Study the following program and answer the given questions.

```
DECLARE FUNCTION OUTPUT (N)
CLS
INPUT “Enter any number”; N
X=OUTPUT (N)
PRINT X
END
FUNCTION SUM (N)
WHILE N<>0
R=N MOD10
```

```
S=S * 10 + R
N=INT (N/10)
WEND
SUM=S
END FUNCTION
```

a) Write the main objective of the above program.

b) How many times the WHILE…..WEND LOOP repeats if the value of N is 4937?

8. Convert/Calculate as per the instruction's)

ii) $(1100110111)_2 = (?)_{16}$

ii) $(324)_{10} = (?)_2$

iii) $(1010)_2 \times (110)_2 - (1011)_2 = (?)_2$

iv) $(101100)_2 \div (1010)_2$

9. Write a program in QBASIC that will asks the user to input Nepali currency and then use SUB procedure to convert into equivalent Indian currency and use FUNCTION procedure to convert into equivalent US dollar.
[IC 1 = NRS 1.6, $1 = NRS 131.4]

10. As sequential data file called “Student.dat” has stored data under the field heading Roll No, Name, Gender, English, Nepali, Math and Computer. Write a program to count and display all the records of those students whose marks in English is more than80.

11. Write a program in C language that inputs an integer and

display whether it is prime or not.

Or

Write a program in ‘C’ language to display the series with sum.

12345 1234 123 12 1

Class: 10 Subject: Opt. II Computer Science Pre-SEE 2081 LMV

Full Marks: 50 Pass Marks: 17.5 Time: 2 hrs.

Candidates are required to answer the questions in their own words as far as practicable.

Attempt all questions.

Group 'A' (10 Marks)

1. **Answer the following questions in one sentence:** (6×1=6)
   a) What is the role of a firewall in a computer network?
   b) Define the term "bandwidth" in data communication.
   c) Which data type in MS-Access is used to store large amounts of text?
   d) What is the purpose of an action query in DBMS?
   e) What is the difference between a local variable and a global variable in programming?
   f) What is the output of the expression y = 10 % 6 in C language?
2. **Write appropriate technical term for the following:** (2×1=2)
   a) A device that connects multiple networks and directs data packets between them.
   b) The process of converting plain text into unreadable text to secure data.
3. **Write the full form of the following:** (2×1=2)
   a) GPRS
   b) ISDN

Group 'B' (24 Marks)

4. **Answer the following questions:** (9×2=18)
   a) What is network topology? Explain the advantages and disadvantages of ring topology.
   b) Define cryptography with diagram. Explain any two security measures each used for information security and hardware security.
   c) What is digital citizenship? Explain its importance in the modern digital world.
   d) What is Artificial Intelligence? List any two advantages and disadvantages of AI with examples.
   e) Differentiate between e-commerce and traditional commerce with examples.
   f) What is a primary key in a database? How it is different from foreign key with respect to its uses?
   g) What is the difference between a form and a report in MS-Access?

h) Explain the concept of data redundancy in DBMS. How can it be minimized?
i) What is the difference between a select query and an update query in DBMS?

5. **Write down the output of the given program. (Show with dry run in table):** (2)

```
DECLARE FUNCTION TEST(N)
CLS
FOR I = 1 TO 3
   READ X
   S = S + TEST(X)
NEXT I
PRINT "Sum="; S
DATA 1, 2, 3
END

FUNCTION TEST(N)
TEST = N * 2
END FUNCTION
```

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

```
REM to check whether the supplied no is even or odd
DECLARE SUB TEST(N)
CLS
INPUT "ENTER THE NUMBER;";N$
CALL TEST(N)
END

Y=2
R=Y MOD N
IF R=1 THEN
PRINT"EVEN"
OR
PRINT"ODD"
END
END SUB
```

7. **Study the following program and answer the given questions:** (2×1=2)

```
DECLARE SUB DISPLAY(N)
CLS
FOR I = 1 TO 3
   READ X
   CALL DISPLAY(X)
NEXT I
DATA 2, 3, 4
END

SUB DISPLAY(N)
PRINT N * 3
END SUB
```

a) List the perimeter and argument used in the above program?

b) How many times is the DISPLAY subroutine called?

Group 'C' (16 Marks)

8. **Convert / Calculate as per the instruction:** (1×4=4)

   i) $(101101)_2 = (?)_{10}$

   ii) $(256)_{10} = (?)_8$

   iii) $(1101)_2 \times (101)_2 = (?)_2$

   iv) $(101101)_2 \div (101)_2 = (?)_2$

9. **Write program:** (4×3=12)

   a) Write a program in QBASIC to calculate the surface area and volume of a cuboid using a user-defined function for surface area and a sub-procedure for volume. [Hint: surface area = 2 (LB + LH + BH), Volume = L B H]

   b) A sequential data file "STUDENT.DAT" contains records of students with fields: Name, Class, and Marks of English and computer. Write a program to display the records of students who scored more than 90 marks in each subject.

   c) Write a program in C language to input three different numbers and display the greatest and the smallest number among them. **(4)**

OR

Write a program in C language to display the odd number series from 99 to 199.