माध्यमिक शिक्षा परीक्षा

विषय : कम्प्यूटर विज्ञान | पूर्णाङ्क : ५० | समय : १ घण्टा ३० मिनेट

समूह क Group A

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

(क) सर्च इन्जिन भनेको के हो ? What is search engine?

(ख) इन्टरनेटमार्फत गरिने व्यापारलाई के भनिन्छ ? What is the business done through the internet?

(ग) एम.एस. एक्सेसमा कुन डाटा टाइपले अल्फा न्युमेरिक क्यारेक्टर वा स्पेसल सिम्बोल्सलाई अनुमति दिन्छ ? Which data type is used to store numeric characters or special symbols in MS-Access?

(घ) एम.एस. एक्सेसमा टेबलको कतचगअतगचभ लाई ञयमषथ गर्न कुन चाहिँ खष्भध को प्रयोग गरिन्छ ? Which view is used to modify a table in MS-Access?

(ङ) मोड्युलर प्रोग्रामिङ भनेको के हो ? What is Modular Programming?

(च) ऋ बिलनगबनभ कुनै दुईओटा विशेषता लेख्नुहोस् । Write any two features of C language.

२. उपयुक्त प्राविधिक शब्द लेख्नुहोस् : Write appropriate technical term for the following: (२×१= २)

(क) साइबर स्पेससम्बन्धी कानुनी प्रक्रिया Law that governs the legal issues of cyberspace.

(ख) क्वान्टम कम्प्युटरको सूचनाको सबैभन्दा सानो एकाइको रूप The smallest unit to represent information on quantum compute.

३. पूरा रूप लेख्नुहोस् : Write the full form of the following: (२×१= २)

I. STP II. WAP

४. तलका प्रश्नहरूको छोटो उत्तर दिनुहोस् : Answer the following questions: ९×२=१८

(क) कम्प्युटर नेटवर्क भनेको के हो ? यसका कुनै दुईओटा फाइदाहरू उल्लेख गर्नुहोस् । What is computer network? Enlist any two advantages of it.

(ख) कम्प्युटर नैतिकता भनेको के हो ? यसका कुनै दुई नीतिहरू लेख्नुहोस् । What is computer ethics? Write any two of them.

(ग) सफ्टवेयर सुरक्षा भनेको के हो ? हार्डवेर सुरक्षाका कुनै दुई उपायहरू लेख्नुहोस् । What is software security? Write any two measures of hardware security.

(घ) एम कमर्स भनेको के हो ? यसका दुई महत्त्वपूर्ण सेवाहरू लेख्नुहोस् । What is m-Commerce? Write its two important services.

(ङ) इन्टरनेट अफ थिङ्स भनेको के हो ? यसका कुनै दुई महत्त्वहरू लेख्नुहोस् । What is IoT? Write any two importance of it.

(च) डाटाबेस भनेको के हो ? कुनै दुईओटा उदाहरण दिनुहोस् । What is database ? Give any two examples.

(छ) प्राइमरी की भनेको के हो ? यसका कुनै दुईओटा फाइदाहरू उल्लेख गर्नुहोस् । What is primary key? List any two advantages of it.

(ज) डाटा सर्टिङ भनेको के हो ? यसको प्रयोगबाट हुने कुनै दुईओटा फाइदाहरू उल्लेख गर्नुहोस् । What is data sorting? List any two advantages of using it.

(झ) कस्तो कार्य गर्न एक्सेसमा क्वेरी र फर्म अब्जेक्टको प्रयोग गरिन्छ ? What types of work is done in MS-Access using Form and query object?

५. तल दिइएको प्रोग्रामको आउटपुट लेख्नुहोस् । म्चथ चगल टेबलमा देखाउनुहोस् । Write down the output of the given program. Show with dry run in table. (२)

```
DECLARE SUB SHOW (A)
CLS
```

```
END IF NEXT I CLOSE #1, #2
KILL "Detail.dat"
NAME "Temp.dat" AS "Detail.dat" END
```

(क) माथि दिइएको प्रोग्रामको मुख्य उद्देश्य के हो ? What is the main objective of the program given above? यदि "KILL" statement लाई प्रोग्रामबाट हटाउने हो भने माथिको प्रोग्राममा केही समस्या आउँछ कि आउँदैन ? कारण लेख्नुहोस् । Do you get any problem in the above program if "Kill" statement is removed? Give reason.

समूह ग Group 'C'

निर्देशाअनुसार रूपान्तर र हिसाब गर्नुहोस् : Convert / calculate as per the instruction: (४×१= ४)

i) $(11001101)_2 = (?)_{16}$

ii) $(524)_{10} = (?)_2$

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

iv) $(10110)_2 \div (101)_2$

(क) कुनै एउटा कोठाको लम्बाई, चौडाई र उचाई मागी उक्त कोठाको क्षेत्रफल र आयतन पत्ता लगाउने प्रोग्राम क्युवे सिकभाषाको प्रयोग गरी लेख्नुहोस् । क्षेत्रफल गणना गर्न युजर डिफाइन्ड फंक्सन र आयतन गणना गर्न सब प्रोग्राम बनाउनुहोस् । Write a program in QBASIC that asks length, breadth and height of room and cal- culates its area and volume. Create a user-defined function to calculate area and sub-program to calculate volume. Hint: [A = LxB], [V = LxBxH]

(ख) "Record.dat" भन्ने sequential data file df Roll No., Name, Gender, English, Nepali, Maths/ Computer field हरूमा data भण्डार गरेर राखिएको छ । त्यस data file af6 Gender 'F' हुने र कम्प्युटर विषयमा अङ्क ९० भन्दा माथि भएका विद्यार्थीहरूको सम्पूर्ण रेकर्ड प्रिन्ट गर्ने प्रोग्राम लेख्नुहोस् । A sequential data file called "Record.txt" has stored data under the field heading Roll No., Name, Gender, English, Nepali, Maths and Computer. Write a program to display all the information of those students whose gender is 'F' and obtained marks in computer is more than 90. (४)

. कुनै एउटा सङ्ख्या मागी उक्त सङ्ख्या जोड वा विजोड के हो, सो पत्ता लगाउने प्रोग्राम सी ल्याङ्वेजमा लेख्नुहोस । Write a program in C language that asks a number and check whether it is odd or even. (४)

अथवा

सि ल्याङ्वेज को प्रयोग गरी दिइएको अनुकमको योगफल सहित देखाउने प्रोग्राम लेख्नुहोस् । 1, 2, 3, 4, ..., दशौं पदसम्म । Write a program in 'C' language to display the series with their sum. 1, 2, 3, 4,....., up to 10^{th} terms.

External Practical Model Set

Group A [MS Access - 10 Marks]

a) Create a database " school and create table "into " with the following structure. 2

b) Add any five records in "into" table. 2

c) Create query to display Name . Eng and Comp fields. 2

d) Increase the marks of English by 7 % of every student. 2

e) Prepare a report consisting of Roll Name. DOB and Computer fields. 2

Group B (QBASIC - 9 Marks)

2. a) Write a QBASIC sub program to find simple interest. 3

b) Write a program in QBASIC using Function... End Function to reverse a given string. 3

c) Create a data file named "Student txl" which stores Student name class, address and email. program should terminate according to user's choice. 3

Group 'C' [C Programming - 6 Marks]

3. a) Write a C program ot print the largest number among two different numbers. 3

b) Write a C program to display : 7.22, 11 ... up to 10 th tems. 3

SEE Examination (New Course) [(2078 (2022)]

Time : 1:30 hrs. Full Marks : 50

दिइएका निर्देशनका आधारमा आफ्नै शैलीमा सिर्जनात्मक उत्तर दिनुहोस् ।

समूह क (Group A) (10 Marks)

1. तलका प्रश्नहरूको एक वाक्यमा उत्तर लेख्नुहोस् । Answer the following question in one sentence. 6×1=6

   क) कुनै दुई सर्च इन्जिनको नाम दिनुहोस् । Write the name of any two search engines.

   ख) सामाजिक सञ्चाल भनेको के हो ? What is social media ?

   ग) एम.एस. एक्सेसमा विद्यार्थीका फोटाहरू भण्डारण गर्न कुन डाटा प्रकार उपयुक्त हुन्छ ? Which data type is suitable to store photographs of students in MS-Access ?

   घ) एम.एस. एक्सेलमा टेवलको Structure लाई Modify गर्न कुन चाहिँ view को प्रयोग गरिन्छ ? Which view is used to modify a table structure in MS-ccess ?

   ङ) Sub-procedure मा Sub-procedure cell गर्न कुन Statement प्रयोग गरिन्छ ? Which statement is used to call sub-procedure ?

   च) C language मा प्रयोग हुने कुनै दुई डाटाको प्रकारको प्रकार लेख्नुहोस् । Write any two data types used in C language.

2. उपयुक्त प्राविधिक शब्द लेख्नुहोस् ।

   Write appropriate technical tem for the following. 2×1=2

   क) कम्प्युटरमा भएक डाटा र सुचनालाई कपी बनाई अर्को ठाउँमा भण्डार गर्नु । A system of copying data and information residing in computer into another location.

   ख) इन्टरनेट सुविधा प्रदान गर्ने कम्पनी । A compary which provides services of intemet.

3. पूरा रूप लेख्नुहोस् । Write the full form of the following. 2×1=2

   क) FTP ख) MAN

समूह ख (Group B) (24 Marks)

4. तलका प्रश्नहरूको छोटो उत्तर दिनुहोस् । Answer the following questions in short.

   क) कम्प्युटर सुरक्षा भनेको के हो ? यसका कुनै दुई फाइदाहरू लेख्नुहोस् । What is computer network ? Write any two advantages of it.

   ख) सफ्टवेयर सुरक्षा भनेको के हो ? यसको सुरक्षाका कुनै दुई उपायहरू लेख्नुहोस् । What is software security ? Write any two protection messures for it.

   ग) सर्च इन्जिन भनेको के हो ? कुनै दुईओटा उदाहरणहरू लेख्नुहोस् । What is a search engine ? Write any two popular search engines.

   घ) इ- कमर्स भनेको के हो ? यसका दुईओटा फाइदाहरू लेख्नुहोस् । What is e-commerce ? Write any two benetits of it.

   ङ) सामाजिक सञ्जालका कुनै दुईओटा फाइदा र बेफाइदाहरू लेख्नुहोस् । Write any two advantage and disadvantages of social media.

   च) DBMS भनेको के हो ? यसका दुई फाइदाहरू लेख्नुहोस् । What is DBMS ? Write any two advantages of it.

   छ) प्राइमरी कि भनेको के हो ? यसका कुनै दुई विशेषताहरू लेख्नुहोस् । What is primary key ? Write any two features of it.

   ज) Fieid र Record को परिभाषा लेख्नुहोस् । Define field and record.

   झ) Form भनेको के हो ? यसका दुई उपयोगिताहरू लेख्नुहोस् । What is form ? Write any two uses of it.

5. तलका प्रोग्रामको आउटपट लेख्नुहोस् । Write the output of the given progam. Workout with a dry run. 2

```
DECLARE SUB ABC (A)
CLS
A=2
CALL ABC (A)
END
SUB ABC (A).
    FOR J= 1 TO 5
        PRINT A;
        A=A+3
    NEXT J
END SUB
```

6. तल दिइएका प्रोग्राममा रहेका गल्तीहरूलाई सच्चाएर पुन: लेख्नुहोस् । Re-write the given program after correcting the bugs. 2

```
DECLARE SUB SERIES ( )
CLS
EXCUTE Series
END

SUB Series ( )
    REM Program to generate 1 1 2 3 5 ..... up to the 20th terms
    A = 1
    B = 1
    FOR ctr = 10 to 1
        DISPLAY A: B:
        A = A + B
        B = A + B
    NEXT  ctr
END series ( )
```

7. तल दिइएको प्रोग्रामलाई अध्ययन गरी सोधिएका प्रश्नहरूको उत्तर दिनुहोस् । Study the following program and answer the given questions. 2×1=2

```
DECLARE FUNCTION TEXT (X)
X=100
Z=TES(X)
PRINT Z
END
FUNCTOIN TEXT (X)
    FOR R = 1 TO X
        S=S+1
    NEXT R
    TEST=S
END FUNCTION
```

क) माथिको प्रोग्राममा कतिओटा parameters प्रयोग गरिएका छन् ? How many parameters are used in the above program ?

ख) माथिको प्रोग्राममा कति चोटि S=S+1 स्टेटमेन्ट एक्जिक्युट हुन्छ ? How many times does the statement S=S+1 execute in the above program ?

समूह ग (Group C) (16 marks)

8. निर्देशनअनुसार रूपान्तर र हिसाब गर्नुहोस् । Convert/Calculate as per the instruction.

i) $(11111101)_2 = (?)_{16}$ ii) $(245)_{10} = (?)_2$

iii) $(1010)_2 \times (101)_2 = (?)_2$ iv) $(101110)_2 \div (110)_2$

9. तलका प्रश्नहरूको उत्तर लेख्नुहोस् । Answer the following questions. 2×4=8

क) कुनै एउटा कोठाको लम्बाइ, चौडाइ मागी उक्त कोठाको क्षेत्रफल र परिधि (Perimeter) पत्ता लगाउने प्रोग्राम क्युबेसिक भाषाको प्रयोग गरी लेख्नुहोस् । क्षेत्रफल गणना गर्न user-defined function र परिधि (perimeter) गणना गर्न sub program बनाउनुहोस् ।

Hint: [Area = L×B], [P=2(L+B)]] 4

ख) "Salary dat" भन्ने sequential data file मा चाहनाअनुसार प्रोग्रामरको नाम, तलब र पद भण्डार गर्ने प्रोग्राम लेख्नुहोस् । Write a program to create a sequential data file "salary.dat to store programmer's name. salary and post according to the need of the user. 4

10. C-program प्रयोग गरी नकारात्मक (negative), सकारात्मक (positive वा शून्य (zero), के हो, सो पत्ता लगाउने प्रोग्राम लेख्नुहोस् । Write a c-program that asks a number and check wheather it is negative, positive or zero.

अथवा (or)

C-language को प्रयोग गरी कुनै १० विजोर संङ्ख्याहरू देखाउने एउटा प्रोग्राम लेख्नुहोस् । Write a program in C -language to display first 10 odd numbers.

SEE 2079 (2023)

ऐच्छिक द्वितीय कम्प्युटर विज्ञान

समय : १ घण्टा ३० मिनेत **पूर्णाङ्क : ५०**

दिइएका निर्देशनका आधारमा आफ्नै शैलीमा सिर्जनात्मक उत्तर दिनुहोस् ।

समूह क Group A

१. तलका प्रश्नहरूको एक वाक्यमा उत्तर दिनुहोस् । Answer the following questions in one sentenceM

(क) नेटवर्क प्रोटोकल भनेको हे हो ? What is network protocol?

(ख) ई कर्मश भनेको के हो ? What is e–commerce?

(ग) एम्. एस्. एक्सेसमा टेक्स्ट फिल्डको डिफल्ट साइज कति हो ? What is the default size of text field in MS–Access?

(घ) एम्. एस्. एक्सेसमा कुन डाटा टाइपमा फोटो भण्डारण गर्न अनुमति दिन्छ ? Which data type is used to store photo in MS–Access?

(ङ) Looping भनेको के हो ? What is Looping?

(च) C–Programming ल्याङ्ग्वेजमा प्रयोग गरिने कुनै दुईओटा data type हरू उल्लेख गर्नुहोस् । List any two data types used in C–programming language.

२. उपयुक्त प्राविधिक शब्द लेख्नुहोस् : Write appropriate technical term for the following: (२×१=२)

(क) भाइरस हटाउन सक्ने प्रोग्राम A program that can disinfect a file from virus.

(ख) विद्युतीय माध्यमबाट हुने सिकाइ Learning through the electronic media.

३. पूरा रूप लेख्नुहोस् : Write the full form of the following. (२×१=२)

(क) G2G (ख) ISP

समूह 'ख' (Group B)

तलका प्रश्नहरूको उत्तर दिनुहोस् : Answer the following questions: (९×२=१८)

(क) नेटवर्क टोपोलोजी भनेको के हो ? नेटवर्क टोपोलोजीको कुनै दुई प्रकार सूचीबद्ध गर्नुहोस् । What is network topology? List any two types of network topology.

(ख) एन्टिभाइरस सफ्टवेयर के हो ? कुनै दुई लोकप्रिय एन्टिभाइरस सफ्टवेयरको नाम लेख्नुहोस् । What is antivirus software? Name any two popular antivirus softwares.

(ग) साइबर कानुन र साइबर अपराध भनेको के हो ? Define cyber law and cybercrime?

(घ) भर्चुअल रियालिटीको परिभाषा लेख्नुहोस् । भर्चुअल रियालिटी प्रयोग भएको कुनै दुई क्षेत्र लेख्नुहोस् । Define virtual reality. Write any two areas where virtual reality is used.

(ङ) पासवर्ड भनेको के हो ? पासवर्ड सुरक्षाको कुनै दुई महत्त्व लेख्नुहोस् । What is password? Write any two importance of password protection.

(च) DBMS भनेको के हो ? एम्. एस्. एक्सेसको चार अब्जेक्टहरूको नाम लेख्नुहोस् । What is DBMS? Write four objects of MS–Access.

(छ) भेलिडेसन टेक्स्ट र भेलिडेसन रूल भनेको के हो ? What are validation text and validation rule?

(ज) Form भनेको के हो ? यसका दुई फाइदाहरू लेख्नुहोस् । What is form? Write two advantages of it.

(झ) रेकर्ड भनेको के हो ? रेकर्डमा प्राइमरी की किन आवश्यक छ ? What is record? Why is primary key necessary in record?

५. तल दिइएको प्रोग्रामको आउटपुट लेख्नुहोस् । Write down the output of the given program:

```
DECLARE SUB Series (A)
CLS
A=20
CALL Series (A)
END
SUB Series (A)
FOR K= 1 to 5
PRINT A;
A= A+10
NEXT K
END SUB
```

(घ) तल दिइएको प्रोग्राममा रहेका गल्तीहरूलाई सच्याएर पुन: लेख्नुहोस् । Re–write given program after correcting the bugs:

```
REM program to make a word reverse
DECLARE FUNCTION Rev$ (N$)
CLS
LNPUT "Enter a word"; N$
DISPLAY "Reversed is", Rev$ (N$)
END
EUNCTION Rev$ (N$)
    FOR K= LENS (N) To 1 STEP–1
        B$=B$+MID$ (N$, 1, K)
NEXT K
B$= Rev$
END FUNCTION
```

७. तल दिइएको प्रोग्रामलाई अध्ययन गरी दिइएका प्रश्नहरूको उत्तर दिनुहोस् : Study the following program and

answer the given questions: (२×१=२)

```
DECLARE FUNCTION SUM (N)
CLS
INPUT "Enter any number"; N
X=SUM (N)
PRINT "The sum of individual digit is "; X
END

FUNCTION SUM (N)
    WHILE N< >0
        R=N MOD 10
        S=S+R
        N=INT (N/10)
    WEND
    SUM=S
END FUNCTION
```

(क) INT को कार्य लेख्नुहोस् । Write the function of INT.

(ख) N को मान 123 हुँदा WHILE.... WEND लुप कति पटक दोहोरिन्छ ? How many times does the WHILE.... WEND loop repeat if the value of N is 123?

समूह 'ग' (Group C)

८. निर्देशनअनुसार रूपान्तर र हिसाब गर्नुहोस् । Convert÷Calculate as per the instruction: (४×१=४)

i. $(10110011)_2 (?)_{16}$ ii. $(410)_{10} = (?)_2$

iii. $(1001 + 110)_2 - (1000)$ iv. $(10110)_2 + (101)_2$

९. तलका प्रश्नहरूको उत्तर लेख्नुहोस् : Answer the following questions. (४×२=८)

(क) कुनै एक वृत्तको अर्धव्यास मागी उक्त वृत्तको क्षेत्रफल र परिधि पत्ता लगाउने QBASIC भाषाको प्रयोग गरी प्रोग्राम लेख्नुहोस् क्षेत्रफल गणना गर्न युजर डिफाइन्ड फङसन र परिधि गणना गर्न सब-प्रोग्राम बनाउनुहोस् । Write a program in QBASIC that asks radius of a circle to calculate its area and circumference. Create a user–defined function to calculate area and sub–program to calculate circumference. [HINT $A = \pi r^2$, $C = 2\pi r$]

(ख) "Record.dat" भन्ने सिक्वेन्सियल डाटा फाइल मा Roll No., Name, Gender, English, Nepali, Maths र computer field data गरेर राखिएको छ । त्यस data file बाट English मा 40 भन्दा बढी अङ्क भएका विद्यार्थीहरूको रेकर्ड प्रिन्ट गर्ने प्रोग्राम लेख्नुहोस् । A sequential data file called "Record.dat" has stored data under the field headings: Roll No., Name, Gender, English, Nepali, Maths and Computer. Write a program to display all the information of those students whose marks in English is more than 40.

१०. सी ल्याङ्वेजमा एउटा प्रोग्राम लेख्नुहोस् जसले कुनै दुई सङ्ख्या मागी उक्त सङ्ख्या मध्ये ठुलो सङ्ख्या देखाउँछ । Write a program in C–language that asks any two numbers and displays the greatest among them. ४

वा (or)

सी ल्याग्वेजको प्रयोग गरी दिइएको अनुक्रमको योगफलसहित देखाउने प्रोग्राम लेख्नुहोस् । 1, 2, 3, 4....., दशौं पदसम्म । Write a program in C–language to display the series with their sum. 1, 2, 3, 4..., up to 10th term.

SEE and Qualifying Examination Questions
(PABSON) - 2078

समूह क (Group 'A')

1. तलका प्रश्नहरूको एक वाक्यमा उत्तर दिनुहोस् । Give answer in one sentence for the following questions. ६×१=६

क) व्यान्डविचको परिभाषा लेख्नुहोस् । Define bandwidh.

ख) साइबर बुलिङ् भनेको के हो ? What is cyber builying ?

ग) AI भनेको के हो ? What is AI. ?

घ) MS-Access मा मेमो र टेक्स्ट डाढा प्रकारको भण्डारण आकार के हो ? What is the Storage size of memo and texi data type in MS-Access ?

ङ) लोक्ल भरिएवल भनेको के हो ? What is local variable ?

च) C language मा अप्रेटर भनेको के हो ? What is an operator in C language ?

2. उपयुक्त प्राविधिक शब्द लेख्नुहोस् । Write an appropriate technical term for the following. २×१=२

क) गोप्य अक्षरहरूको समूह जसले अनधिकृत व्यक्तिबाट फाइल खोल्नबाट बचाउँछ । Secret a group of chanacters which helps to protect file from unauthorized person.

ख) एक प्रकारको नेटवर्क जसमा रहेका कम्प्युटरले client र server को काम गर्दछ । A type of network in which every computer works as both clinent and server.

3. पुरा रूप लेख्नुहोस् । Write the full form of the following. २×१=२

a. ADSL b. TCP/IP

समूह ख (Group B)

4. तलका प्रश्नहरूको छोटो उत्तर दिनुहोस् । Answer the follwoing question in short. ९×२=१८

क) LAN र WAN विचको भिन्नताहरू लेख्नुहोस् । Differentiate between LAN and WAN.

ख) कम्प्युटर नैतिकताका कुने चोरओटा आज्ञाहरू लेख्नुहोस् । Write any four commandments of computer ethics.

ग) E-commerce भनेको के हो ? नेपालमा रहेका कुनै दुईओटा E-commerce ? List any two E-commerce compaines in Nepal.

घ) क्लाउड कम्प्युटिङ्गको फाइदाहरू के के हुन् ? What are advantages of cloud computing ?

ङ) भिआर भनेको के हो ? यसको प्रयोग क्षेत्रहरू लेख्नुहोस् । What is VR ? Mention its application area.

च) डिवियमएस भनेको के हो ? यसको कुनै दुर्य उदाहरणहरू । What is DBMS ? Give any two examples of it.

छ) प्राइमरी कि भनेको के हो ? यसको कुनै दुई उदाहरणहरू लेख्नुहोस् । What is primary key ? List any two advantages of it . २

5. तल दिइएको प्रोग्रामको आउटपुट लेख्नुहोस् । Write down the output of the given program.

```
DECLARE SUB DISPLAY (A)
CLS
A = 3
CALL DISPLAY (A)
END
SUB DISPLAY (A)
FOR X = 1 TO 6
PRINT A:
IF A MOD 2 = 0 THEN
A - A/2
```

```
ELSE
A = (A*3 )+1
END IF
NEXT X
END SUB
```

6. दिइएको प्रोयागको गल्तीहरूलाई सच्चाई पुन: लेख्नुहोस् । Re write the given program after correcting the bugs. २

```
REM to add more data in a sequential data file
OPEN "EMP DAT" FOR INPUT AS#2
DO
INPUT "ENTER NAME"; N$
INPUT "ENTER ADDRESS", A$
INPUT "ENTER SALARY"  S$
WRITE # 1, N$, A$, S
INPUT "Do you want to add more record"; M$
LOOP WHILE UCASE(M$)= "Y"
END
```

7. तल दिइएको प्रोग्राम अध्ययन गरी सोधिएको प्रश्नहरूको उत्तर लेख्नुहोस् । Study the given program and answer the given questions. २

```
DECLARE FUNCTION text$(A$)
CLS
INPUT "ENTER ANY WORD"; t$
PRINT TEXT$(A$
END
FUNCTION TEXT$(A$)
FOR M = LEN (A$) TO 1 STEP -1
C$ = C$ + MID$(A$, M, 1)
NEXT M
Text$ =c$
END FUNCTION
```

क) माथिको प्रोग्राममा प्रयोग गरिएको वास्तविक तथा औपचारिक प्यारामिटरहरू लेख्नुहोस् । List the actual and formal parameters used in the program given above.

ख) माथिको प्रोग्राममा प्रयोग भएको Libray function हरू उल्लेख गर्नुहोस् । List the library functions used in the above program.

समूह ग (Group c) (16 Marks)

8. निर्देशनअनुसार बदल्नुहोस् । Convert/Calulate as per the instruction. 4×1=4

a) $(CCA)_{16}$ is into binary

b) $(654)_{10}$ into octal

c) $(111011 \div 100)_2$

d) $(101010 - 1110)_{10}$

9. क) प्रयोगकर्ताबाट अर्धव्यास लिई user defined function प्रयोग गरी वृत्तको क्षेत्रफल र Sub procedure को प्रयोग गरी बेलनाकारको आयतन निकाल्नुहोस् । Write a program in OBASIC that allows user to enter radius of a circle. Create a user defined function to find area of circle and sub procedure to find volume of a cylinder. Hint. ($A = \pi r^2$ $v = \pi r^2 h$) 4

ख) एउटा sequential data file "empdat" मा कर्मचारीको नाम, ठेगाना, लिङ्ग र तलब भण्डारण गरिएको छ । उक्त फाइलबाट तलब रू. २०,००० भन्दामाथि रहेको record हरू मात्र Print गर्ने Program लेख्नुहोस् । A sequential data file "emp dat" contains employee's name. Address, gender and salary WAP to display all the information of employees whose salary is more than Rs. 20,000.

10. सिल्याङ्वेजको प्रयोग कुनै दुईओटा संङ्ख्यामा ठूला संङ्ख्या पत्ता लगाउनुहोस् । Write a program in C language to input any two number and find greater number. 4

SEE and Qualifying Examination Questions (PABSON) - 2079

Group A समुह 'क'

1. **तलका प्रश्नहरूको उत्तर एक वाक्यमा लेख्नुहोस् : Answer the following questions in one sentence. [6 × 1 = 6]**
   a) ईन्ट्रानेटको प्रयोग कहाँ गरीन्छ ? Where does internet has been used?
   b) Cloud computing का दुईओटा फाइदा लेख्नुहोस् । Write any two benefits of cloud computing.
   c) एम. एस. एक्सेसमा इमप्लोइको जन्ममिति स्टोर गर्न कुन डाटा टाईपको प्रयोग गरिन्छ ? Which data type is used to store date of birth of an employee in MS-Access?
   d) एम. एस. एक्सेस डाटाबेसमा प्रयोग हुने दुईओटा data type लेख्नुहोस् । Write any two data type used in MS-Access database?
   e) QBASIC मा प्रक्रियाहरू के-के हुन् ? What are procedure in QBASIC?
   f) "C" language कुनै दुई फाइदाहरू लेख्नुहोस् । Write any two features in 'C' language.

2. **उपयुक्त प्राविधिक शब्द लेख्नुहोस् । Write appropriate technical term for the following. [2 × 1 = 2]**
   a) सञ्चार लाई सहजबनाउने प्रोटोकल । The protocol that makes the network communication possible.
   b) इन्टरनेटप्रयोग गर्दा सिर्जनाहुने डिजिटल मार्कहरू । Digital marks created while using Internet.

3. **तलका विषयहरूको पूर्ण रुप लेख्नुहोस् । Write the full form of the following. [2 × 1 = 2]**
   a) ISDN b) TCP/IP

Group B समुह 'ख'

4. **तलका प्रश्नहरूको उत्तर संक्षेपमा लेख्नुहोस् । Answer the following question in short.**
   a) चित्र सहित peer to peer र client-server network विचको फरक छुट्याउनुहोस् । Differentiate between peer to peer and client-server network with figure.
   b) कम्प्युटर अपराध भनेको के हो ? यसका कुनै दुई उदाहरणहरू दिनुहोस् । What is cyber ethics? Give any two example of it.
   c) सफ्टवेयर सुरक्षा भनेको के हो ? यसका कुनै दुईओटा मापदण्ड लेख्नुहोस् । What is software security? Write any two measures of software security.
   d) इलेक्ट्रोनिककमर्स भनेको के हो ? यसका महत्वहरु लेख्नुहोस् । Define E–Commerce ? Write its importance.
   e) आजको समयमा मोबाइल कम्प्युटिङ किन महत्वपूर्ण छ ? यसका कुनै दुईवटा महत्वहरु लेख्नुहोस् । Why mobile computing is necessary in present time? Write any two importance of it.
   f) उदाहरण सहित Primary key र Foreign key विच भिन्नता लेख्नुहोस् । Differentiate between Primary key and Foreign key with example.
   g) Query भनेको के हो ? यसका कुनै दुई फाईदाहरु लेख्नुहोस् । What is query? List any two advantages of it.
   h) डाटा सर्टिङ भनेको के हो ? यो प्रयोग गर्नुको दुई फाईदाहरु लेख्नुहोस् । What is data sorting ? List any two advantages of using it.

i) Form को परिभाषा दिनुहोस् । यसका २ महत्वहरु लेख्नुहोस् । Define form. Write its two importance.

5. **तल दिइएको प्रोगामको आउटपुट लेख्नुहोस् । ड्राई रन टेबलबाट देखाउनुहोस् । Write down the output of the given program. Show with dry run in table.** [2]

```
DECLARE SUB SERIES ()
CLS
CALL SERIES
END SUB SERIES ()
X = 1
Y = 2
FOR P = 1 TO 10
PRINT X;
X = X + Y
NEXT P
END SUB
```

6. **दिइएको प्रोगाममाई पुन:लेखन गर्नुहोस् । Re–write the gives program after correcting the bug :** [2]

```
REM to store record in data file
CLS
OPEN "employee.data" FOR INPUT AS #1
DO
INPUT "Enter Name, address and gender"; N$, A, G
INPUT #1, NS, A, G
INPUT "Do you want to continue"; Y$
WHILE UCASE$(Y$) = "Y"
CLOSE "employee.dat"
END
```

7. **तल दिइएको प्रोग्राम अध्ययन गर्नुहोस् र दिइएको प्रश्नहरूको उत्तर लेख्नुहोस् । Study the following program and answer the given questions:** [2]

```
DECLARE FUNCTION text$(N$)
CLS
INPUT "Enter any string"; X$
PRINT text$(X$)
END
FUNCTION text$(N$)

FOR i = len (N$) TO 1 STEP –1
W$ = W$ + MID$(N$, I, 1)
NEXT i
text$ = W$
NEXT Q
END FUNCTION
```

Questions:

a) माथि दिइएको प्रोग्रामको मुख्य उद्देश्यके हो ? What is the main objective of above program?

b) माथि दिईएको प्रोग्राममा प्रयोग भएका parameters को सुचि तयार पार्नुहोस् । List all the parameters used in above program.

Group C समूह 'ग'

8. दिइएको निर्देशनानुसार Convert/ Calculate गर्नुहोस् : Convert/ Calculate as per the instruction. [4 × 1 = 4]

a) $(10111101)_2 = (?)_8$ b) $(645)_{10} = (?)_{16}$

c) $(10101)_2 \times (111)_2$ d) $(111110)_2/(110)_2$

9. a) एउटा कोठाको लम्बाई र चौडाई हालि, त्यसको क्षेत्रफल Function प्रयोग गरी र परिधि Sub procedure प्रयोग गरी लेख्नुहोस् । Write a program in QBASIC to input length and breadth of room and calculate its area using function and perimeter using sub procedure. **[Hint: Area = lxb, Perimeter = 2 (l + b)]** [4]

b) "Record.txt" नाम कसिक्वेनसियल डाटा फाइलले निम्नलिखित फिल्ड अन्तर्गत जानकारीहरु स्टोर गरेको छ । Roll No., Name, Gender, English, Nepali, Maths and Computer. अब त्यस्तो विद्यार्थीको सबै जानकारीहरू निकाल्ने उचयनचक लेख्नुहोस्, जसको मार्क कम्प्युटरमा 90 भन्दा माथि छ । A sequential data file called "Records.dat" has stored data under the fieldheading Roll No., Name, Gender, English, Nepali, Maths and Computer. Write a program to display all the records of students whose marks in computer is more than 90.

10. 80 देखि 90 सम्मको बिजोर नम्बरहरूको योग निकाल्नलाई "C" language मा program लेख्नुहोस् । Write a program in C to calculate sum of odd number from 80 to 90.

OR (अथवा)

तीनवटा इनपुट नम्बर दिई ती मध्ये कुन ठुलो नम्बर हो भनि "सि" ल्याङवेजमा प्रोग्राम लेख्नुहोस् । Write a program in 'C' language to input three number and find greatest number among three.

1. Networking and Telecommunication

Answer the following questions.

1. Define computer network. How it is useful?
2. Give reasons that "Computer network reduces the cost of operation."
3. Write four advantages/merits/pros of computer network.
4. List out any four disadvantages/demerits/cons of computer network.
5. Define bandwidth. How is it measured?
6. Why internet is called network of network? Justify it
7. What is web browser? Write any two of them
8. What is internet? Write any two examples of internet service provider.
9. What are the service provided by Internet?
10. What is Email? Write any two advantages of using Email.
11. What is search engine? Write any two examples of search engine that you use.
12. What do you mean by protocol in computer? Write any two examples of it.
13. What is network topology? Give any two examples of it.
14. Write about star topology with suitable diagram.
15. Write any two advantages and disadvantages of star topology.
16. Write about bus topology with suitable diagram.
17. Write any two advantages and disadvantages of bus topology.
18. Write about ring/loop topology with suitable diagram.
19. Write any two advantages and disadvantages of ring/loop topology.
20. What are the five basic components that are required to make data communication?
21. What are three models/Architecture of Network? Write about client/server Architecture network.
22. Draw and briefly explain about peer-to-peer network.
23. Differentiate between client/server architecture and peer to peer architecture of the network.
24. Write short notes on centralized network with diagram.
25. Write down any two advantages and disadvantages of centralized network.
26. What is communication media?Draw a chart to demonstrate its type.
27. Differentiate between bounded/wired/guided and unbounded/wireless/unguided media.
28. Differentiate between UTP and STP
29. What is network connecting device? Write any two of them.
30. Differentiate between hub and switch.
31. What are data communication mode?Describe its type.
32. What is network operating system? Mention any two examples of it.
33. Write any two functions of network operating system.
34. Classify computer network on the basis of geographical location and explain it.
35. Differentiate between Local Area Network (LAN) and Wide Area Network (WAN).
36. What is device driver?
37. What is Downloading and Uploading?

Write the full form of.

1. ARPANET
2. STP
3. UTP
4. NIC
5. MODEM
6. LAN
7. MAN
8. WAN
9. TCP/IP
10. HTTP
11. SMTP
12. WWW
13. POP
14. FTP
15. URL
16. ISP
17. ATM

Give appropriate technical terms of the followings.

1. Device used to connect a PC with a telephone line
2. A network limited with a room or building
3. Cabling structure of LAN
4. Each computer or device on a network
5. A device that controls two dissimilar networks
6. A server where incoming emails are collected in mailbox
7. A computer that provides services to another computer
8. Operating system that can handle network
9. A cable that transmits light signals
10. Connection of two or more computers to share information
11. The network of networks
12. Sending and receiving messages electronically through the Internet
13. Buying and selling of goods, products, or services over the Internet
14. The websites that search documents for specified keywords in WWW
15. A port on the back of the system unit to connect a computer in network
16. Data transmission in one direction only that is to send or receive only
17. Data transmission in both directions.
18. The amount of data that can be transmitted through communication channels in a fixed time period
19. A set of rules that the computers on a network must follow to communicate and to exchange data with each other.
20. The computer on which users run applications
21. Amplify the signal for long-distance communication in microwave
22. Network device with multiple ports for connecting computers
23. Network device that joins multiple wired or wireless networks

Note:
Please check your answer given at back.

2. Ethical and Social Issues in ICT

Answer the following questions.

1. Define ICT.
2. What is computer ethics? Write any two of them. Why is ethics important in information technology?
3. Write any four commandments of computer ethics.
4. What is hacking? What is the purpose of hacking?
5. Write any two opportunities and threats in social media.
6. Define digital citizenship?
7. What are the elements of digital citizenship?
8. What is a digital footprint?Write with examples.
9. Write any four goals of ICT Policy 2072.
10. What is Electronic Transaction Act?
11. What is cyber ethics? What any two do's and don'ts of cyber ethics.
12. Define cyber bullying with any four examples.
13. Briefly explain cyber law.
14. What is cybercrime? Write two examples of cybercrime.

Write the full form of.

i) IT ii) ICT iii) G2G iv) ETA

Give appropriate technical terms of the followings:

1. A set of moral principles or code of conducts that regulate the use of computers.
2. A code of behavior for using the Internet.
3. The use of technology as a measure of behavior responsible for digital society.
4. The recording of interaction with the digital world.
5. The legal issues related to using of inter-networked information technology.
6. Set of moral principles or code of conducts.
7. The state of full electronic participation in society is
8. Term that encapsulates the legal issues related to the use of communicative, transactional, and distributive aspects of networked information devices and technologies.
9. Combination of information technology and telecommunication technology is called
10. Deals with issues related to cybercrime
11. Process of performing variety of tech-enabled activities via virtual communities and network.
12. The issues related to cybercrime and also help in making and implementing laws over cybercrime.
13. The use of technology as a measure of behavior responsible for digital society
14. The recording of interaction with the digital world
15. The act of promoting the purchase of goods through electronic Means
16. Electronic exchange of information
17. Teaching and learning about teaching and technology
18. Electronic precautions
19. The solution to health problems using digital technology.
20. Act, rules and regulations required for performing electrical work.

Note:

3.Computer Security

Answer the following questions.

1. What is computer security?
2. What are the main objectives of computer security?
3. Write any four possible threats to computer security.
4. What are the security threats? Explain any two in brief.
5. What is software security? Write computer software securitymeasures.
6. Define hardware security.Write four preventive measures of hardware security.
7. How hardware can be damaged?
8. What is software security?
9. Point out any four computer software security measures.
10. What are data and information security?
11. List some points about how we can protect our data.
12. What is a backup? Why is backup vital to computer security system?
13. Define Encryption and Decryption.
14. Define antivirus software with examples
15. What is password? Why is password used in a computer?
16. Write any four criteria for a strong password.
17. What are malicious codes?
18. Define Firewall with examples.
19. What is biometric verification?
20. What is defragmentation?
21. What is a power protection device? Write its role in computer security.
22. Why is it important to protect computer system from dust?

Write the full form of.

i) CD	ii) DVD	iii)UPS	iv) HTTP	v) PIN
vi) PC	vii) NAV	viii) AMC		

Give appropriate technical terms of the followings.

1. The fake attempt to obtain sensitive information.
2. The hardware or software for recording the keys pressed on a keyboard
3. Law that governs the legal issues of cyberspace.
4. The skilled computer expert who uses technical knowledge to overcome a problem
5. The kind of harmful computer code or web script designed to create system vulnerabilities.
6. The process of identifying an individual usually based on a username and password.
7. A memorized secret used to confirm the identity of a user.
8. A process of performing variety of tech-enabled activities via virtual communities and network.
9. The uniquely identified by evaluating one or more distinguishing biological traits.
10. The network security systems that monitors and controls the traffic flow.
11. The technology to encode file or message

12. A small destructive program whose intention is harms computer software and data.
13. Software application used by companies for marketing purposes.
14. A type of program designed to detect and remove viruses from computer system.
15. Copy important data into online storage devices.

Note:
Please check your answer given at back.

4. Ecommerce

Answer the following questions.

1. Define E-Commerce.
2. Mention the benefits and limitations of E-Commerce.
3. What is the business done through the internet? Explain it.
4. Explain the different types of E-Commerce.
5. What is M-Commerce? Give some examples.
6. What is Online Payment? Write the different forms of e-payment in Nepal.
7. Differentiate between Traditional commerce and e-commerce.

Write the full form of.

a) EDI b) B2C c) B2B d) C2C e) M-Commerce
f) PDA g)EFTPOS h) Cod i)EFT

Give appropriate technical terms of the followings.

1. Buying and selling of goods and products over computer communication network such as the Internet.
2. E-commerce conducted between merchant companies and individualconsumers
3. E-commerce is conducted between companies.
4. E-commerce platform provides opportunities in between individual consumers
5. Process of buying and selling of goods and services through smartphones, tablets or personal digital assistants (PDAs).
6. Payment for buying goods or services through the Internet using different online payment gateway

Note:
Please check your answer given at back.

5. Contemporary Technology

Answer the following questions.

1. What is Artificial Intelligence? Where it can be used?
2. List some areas where AI can help us and how?
3. What are the advantages of cloud computing?
4. What is Mobile Computing? Write down any two features of it.
5. Define cloud computing? Name any two cloud computing storage services that you know.
6. What are the types of cloud computing services?
7. What is e-governance? How can public get benefited from the e-governance services?

8. What is e-learning? Write any two advantages of e-learning?
9. Define e-banking. Write e-banking services.
10. What is VR? Write down its application area.
11. Provide some examples of e-governance services that exist in Nepal?
12. What is IoT? Write any two importance of it.
13. Give some examples of IoT devices and their applications?

Give the full forms of the following.

a) e-Com b) IaaS c) SaaS d) PasS e) AI
f) VR g) ICT h) E-Gov i) Wi-Fi j) GPS
k) W-LAN l) QoS m) IoT

Give appropriate technical terms of the followings.

1. Type of Internet-based computing
2. Provides online resources (software, platform, infrastructure) on demand basis.
3. An example of cloud storage.
4. Emerging branch in computer science, which interprets the means and method of making computers think like human beings.
5. Use of computer technology to create a simulated environment.
6 A set of services provided by the government to public via electronic media especially using Internet.
7. A generic term that refers to a variety of devices that allow people to access data and information from wherever they are.
8. A file storage and synchronization service developed by Google.
9. A cloud computing solution by Apple Computer Inc. that provides cloud storage and apps for desktop and mobile devices.
10. A system of interrelated computing device to exchange information over a network without human-to-human or human to computer interaction.

Note:
Please check your answer given at back.

6. Number System

Calculate the following as indicated.

1. Perform the following binary addition.
   i. $(10100)_2 + (1101)_2$
   ii. $(1011)_2 + (1101)_2$
   iii. $(10111)_2 + (1111)_2$
   iv. $(1110)_2 + (1110)_2$
   v. $(10100)_2 + (10011)_2$
2. Perform the following binary subtraction.
   i. $(1100)_2 - (1000)_2$
   ii. $(1100)_2 - (100)_2$
   iii. $(10100)_2 - (110)_2$
   iv. $(101100)_2 - (10011)_2$
   v. $(1100111)_2 - (1011)_2$
3. Perform the following binary multiplication.
   i. $(110)_2 \times (11)_2$ ii. $(101)_2 \times (10)_2$
   iii. $(111)_2 \times (11)_2$ iv. $(1100)_2 \times (101)_2$

v. $(11010)_2 \times (110)_2$

4. Perform the following binary division.
   i. $(111)_2 \div (10)_2$ ii. (10110)2 ÷ (10)2
   iii. $(1101)_2 \div (11)_2$ iv. $(101101)_2 \div (101)_2$
   v. $(111010)_2 \div (110)_2$

5. Perform the following binary simplification.
   i. $(11 \times 10)_2 + (11)_2$ ii. $(10 \times 11)_2 + (101)_2$
   iii. $(1001 + 110)_2 - (1000)_2$ iv. $(1010 \times 110)_2 \div (10)_2$
   v. $(100110 + 110)_2 \div (110)_2$

6. Convert the given numbers as indicated.

Decimal to Binary Conversion.

i. $(425)_{10}$ ii. $(818)_{10}$ iii. $(180)_{10}$ iv. $(27)_{10}$ v. $(670)_{10}$

Decimal to Octal Conversion.

i. $(76)_{10}$ ii. $(103)_{10}$ iii. $(37)_{10}$ iv. $(279)_{10}$ v. $(557)_{10}$

Decimal to Hexadecimal Conversion.

i. $(176)_{10}$ ii. $(106)_{10}$ iii. $(321)_{10}$ iv. $(808)_{10}$ v. $(2047)_{10}$

Binary to Decimal Conversion.

i. $(11010)_2$ ii. $(111100)_2$ iii. $(100011)_2$ iv. $(1101110)_2$ v. $(10011)_2$

Binary to Octal Conversion.

i. $(11100)_2$ ii. $(110010)_2$ iii. $(1011001)_2$ iv. $(10101100)_2$ v. $(111100)_2$

Binary to Hexadecimal Conversion.

i. $(111101000)_2$ ii. $(111100110)_2$ iii. $(1110001000)_2$ iv. $(1100111011)_2$ v. $(1001010)_2$

Octal to Decimal Conversion.

i. $(1124)_8$ ii. $(2134)_8$ iii. $(4044)_8$ iv. $(567)_8$ v. $(601)_8$

Octal to Binary Conversion.

i. $(624)_8$ ii. $(1034)_8$ iii. $(2724)_8$ iv. $(3033)_8$ v. $(2467)_8$

Octal to Hexadecimal Conversion.

i. $(464)_8$ ii. $(5124)_8$ iii. $(2105)_8$ iv. $(5434)_8$ v. $(1150)_8$

Hexadecimal to Decimal Conversion.

i. $(9E8)_{16}$ ii. $(1A067)_{16}$ iii. $(B888)_{16}$ iv. $(AC5)_{16}$ v. $(A02)_{16}$

Hexadecimal to Binary Conversion.

i. $(81F)_{16}$ ii. $(105D)_{16}$ iii. $(9C81)_{16}$ iv. $(1AC)_{16}$ v. $(B0F)_{16}$

Hexadecimal to Octal Conversion.

i. $(A894)_{16}$ ii. $(1AC)_{16}$ iii. $(BAD)_{16}$ iv. $(10001)_{16}$ v. $(FB6)_{16}$

7. Database Management System (DBMS)

1. What is RDBMS?
2. What is database? Give some examples of database.
3. Differentiate between data and information.
4. What is DBMS? Name any four DBMS software.
5. What are the components of database?

Creating Database

Answer the following questions

1. List any four features of MS-Access.
2. What is a database? Give any two examples.
3. Define indexing. Mention its importance.
4. Which data type is used to store numeric characters in MS-Excess?
5. What is database object? List any four database objects.
6. What does data type do? Name any four data types in MS-Access.
7. What is primary key? List any four advantages of primary key.
8. What are field properties? Name any four of them.

Write the most appropriate technical term of following statements.

1. A message displayed after data is entered and checked into a field.
2. Field property that defines label for the field
3. Field property that limits the values that can be entered into a field
4. The value automatically enters for the new record
5. A field or a group of fields that uniquely identifies the records in database.

Entering and Editing Data

Answer the following questions.

1. Define datasheet with examples.
2. Which view is used to modify a table in MS-Access?
3. Define freezing and unfreezing the column. How is it done?
4. Explain data sorting. List any two advantages of using it.

Querying Database

Answer the following questions.

1. What is query? List the different types of query.
2. What is the importance of Query in database?
3. Differentiate between Select query and Action query.

Creating and Using Forms

Answer the following questions.

1. What is form? Mention its uses.
2. Explain the process to create form using wizard.
3. Why form is required in MS-Access?

Creating and Printing Reports

Answer the following questions.

1. What is the report?
2. Mention the importance of creating report in database.
3. List any two major differences between forms and reports.

8. Programming in QBasic

Review of QBASIC

Sequence Structure

1. WAP to find area of a rectangle. [A=LxB]
2. WAP to find circumference of a circle. [C=2πr)
3. WAP to find simple interest. (I=PTR/100)

Branching Structure

1. WAP to check whether an entered number is even or odd.
2. WAP to check whether an entered number is positive or negative.
3. WAP to find the greatest number among two numbers.
4. WAP to find the smallest number among two numbers.
5. WAP that asks any number and checks whether it is divisible by 5 or not.
6. WAP to check whether an entered number is positive, negative or zero.
7. WAP to find the greatest number among three numbers.
8. WAP to find the smallest number among three numbers.

Looping/Iteration

1. WAP to find the sum of n-natural number.
2. WAP to find the product of n natural number entered by user.
3. WAP to find the reverse of a given number.
4. Write a program that checks whether the supplied number is palindrome or not.
5. WAP to check whether a number is Armstrong or not.
6. Write a program that asks any number and displays its factors.
7. WAP that accepts an alphabet and tells whether it is a vowel or a consonant.
8. Write a program that asks any number and calculates its factorial.
9. [Hint: Factorial of 5 = 5 × 4 × 3 × 2 × 1 i.e. 120]
10. Write a program that checks whether the supplied string is palindrome or not.
11. Write a program that asks your name and displays it 10 times.
12. Write a program to display the first 100 natural numbers with their sum.
13. Write a program to generate the following series:
    a. 100,95,90,85,.....,5
    b. 1,4,7, ..., up to 10th terms

c. 1,2,3,5,8,13,21,..., up to 10th terms
d. 1,8,27,64,..., up to 10th terms
e. 1,2,4,8,16,...., up to 10th terms
f. 1,2,4,7,11,16,22, ... , up to 10th terms
g. 1,4,9,16,..., up to 10th terms
h. 999,728,511,342,..., up to 10th terms
i. 1,11,111,1111,1111

Modular Programming

Answer the following questions.

1. Define main-module.
2. Differentiate between local and global variable.
3. What is Modular Programming?
4. What is Procedure? Mention its types.
5. Write the difference between sub-procedure and function-procedure.
6. Write anyone QBASIC program to show the difference between call by reference and call by value.
7. Which statement is used to call sub procedure?

QBASIC

Write QBASIC programs using sub-procedure:

1. WAP that asks any two numbers and find their difference using a sub-procedure.
2. WAP using SUB...END SUB that asks the temperature in Celsius and calculates its Fahrenheit equivalent. [Hint: [F=(9C)/5+32]
3. Write a sub program to display numbers -10, -5, 0, 5, 10, ... up to 12th terms.
4. Write a sub program to find smallest number among 3 different numbers.
5. Write a sub program to check whether input number is prime number or not.
6. Create a sub procedure to display cube of the numbers between 1 to 50.
7. Create a sub procedure program REVERSE (S$) to display reverse of the input string.
8. Write a sub program PALIN ( ) to check whether input number is palindrome or not using argument passing by value method.
9. Write a program using SUB...END SUB to reverse an integer number input by a user.
10. Write a sub program to convert decimal number into its equivalent binary number.
11. Write a program to check whether the input number is negative, positive or zero using SUB ..... END SUB.
12. Write a program to check whether the supplied number is perfect square or not using a sub procedure.
13. Write a program to display only prime numbers between 1 and 500 using a sub procedure.
14. WAP to generate the given series by using sub
    - 1, 2, 3, 4 ... up to 10th term

- 1 ,3 ,5 ,7 ... up to 10 th term
- 1 ,8, 27, 64 ... up to 10th term
- 2 ,8 ,18 ,32... up to 10th term
- 1 ,2, 4, 7 ... up to 10th term
- 5 ,10 ,20, 35... up to 10th term
- 2 ,3, 5, 8...up to 10th term

Write QBASIC programs using function-procedure:

1. Write a program to find the area of four walls using a function procedure.
2. Write a program to define a function procedure that returns simple interest.
3. Write a program using a function procedure to check whether input number is even or odd.
4. Write a program using a function procedure to calculate the square of all digits of input number.
5. Create a user-defined function REV$(S$) to display reverse of the input string.
6. Create user defined function SMALL (A, B, C) that accepts three different numbers and returns the smallest number.
7. Write a program to check whether supplied number is perfect square number or not using FUNCTION ..... END FUNCTION.
8. Write a program to create a function that returns the square of a supplied number.
9. Write a function procedure COUNT (N) to count the number of digits in a number entered by the user.
10. Write a user-defined function to check whether input number is Armstrong or not.
11. Write a program to check whether the supplied number is prime or not using a function procedure.
12. Write a program FACTOR (N) to display sum of factors of a supplied number using a function procedure.

SUB and Function combined

1. Write a program in QBASIC that asks length, breadth of a room and calculate its area and perimeter. Create a user- defined function to calculate the area and sub program to calculate perimeter. [HINT: AREA = L × B, P = 2*(L + B)] (SEE 2078)
2. Write a program in QBASIC that asks length, breadth and height of room and calculates its area and volume. Create a user-defined function to calculate area and sub-program to calculate volume. Hint: [A = L × B, V = L × B × H]
3. Write a program in QBASIC that allows user to enter radius of a circle. Create a user defined function to find area of circle and sub procedure to find volume of a cylinder. Hint:[$A=\pi r^2$, $V=\pi r^2 h$]
4. WAP to input length of a cube and calculate its volume using function and area of four walls using sub procedure [Hint: $V = l^3$, $A = 4l^2$]
5. WAP to input radius of a circle and calculate its area using function and circumference using sub procedure. [Hint: $A = \pi r^2$ and $C = 2\pi r$] (SEE 2079)

Or

Write a program in Qbasic that ask the radius of a circle and calculate the area and circumference of a circle. Create a user-defined function FIRST(r) to calculate area and sub-procedure SECOND(r) to calculate circumference of a circle.

6. WAP a program in QBASIC that allows user to enter length and breadth of a rectangle. Create a user defined function to find area of rectangle and sub procedure to find perimeter of square. [Hint: A = lb and P = 4l]
7. WAP to calculate volume of cylinder using function and its total area using sub procedure [v = $\pi r^2 h$ and a = $2\pi r(r + h)$]
8. WAP to input length, breadth and height of a cuboid and calculate its volume using function and area of four walls using sub procedure. [Hint: v = lbh and A = 2h(l + b)]

File Handling in QBASIC

1. Create a sequential data file name "library.txt" and store name,address,class and roll_no of a student.
2. Create a sequential data file name"Library.txt" and store name,address,class and roll_no of a few students.
3. Create a sequential datafile name "library.txt" and store name, address, class and roll_no until user press Y.
4. A sequential datafile "Patient.txt" contains name of patient, disease, age and bedno. WAP to display only records of RAM.
5. A sequential datafile "Patient.txt" contains name of patient,disease,age and bed no. WAP to display only records whose name starts with "K"
6. A sequential data file "student.dat" contains few records under the fields Name, English, Nepali & Computer. Write a program to add few more records in the same sequential data file.
7. Write a program to create a sequential data file "Employee.Dat" to store employees' Name, Age, Gender and Salary.
8. Read information as name, address, roll and salary from "SALARY.DAT" file and display them.
9. A sequential data file"sales.txt" has several records with fields item's name, rate and quantity. Write a program that reads its first 10 records and displays them.
10. A sequential data file "pass.dat" has several records having fields student's name and marks in English, Math and Computer. Write a program that reads all the records and displays only those records whose name starts with 'A' and also counts the total number of records stored in the file.
11. Write a program that asks item's name, rate and quantity and stores into "sales. txt". The user can supply 10 records in each execution of the program.
12. A sequential data file "class.dat" has several records with fields students' name, roll and class. Write a program that reads all the records and displays only those records whose roll number is less than 10.
13. A sequential data file "EMP.DAT" contains name, post and salary fields of information about employees. Write a program to display all the information of employee along with tax amount also (tax is 15% of salary)
14. Write a program to ask students' name, class, and marks secured in three subjects. Store the data in a sequential data file "RESULT. DAT" along with the total marks. Make a provision to ask the user to enter another record.

DEBUGGING

Re-Write the below programs after correcting the bugs:

1. **DECLARE SUB Fibonacci ()**

```
REM *Fibonacci series* CALL CUB Fibonic
END
```

```
SUB Fibonic
A = 1
B = 1
FOR X= 1 TO 10
DISPLAY a;
A=A+B
B=A+B
END Fibonic
```

2. **REM to display greater among 2numbers**

```
DECLARE SUB great (p, q)
CLS
INPUT "Any two numbers "; a, b
DISPLAY great (p, q)
END
SUB great (a, b)
IF a < b THEN
PRINT a;
ELSE
PRINT b;
END IF
END SUB
```

3. **REM to display the reverse of a string**

```
DECLARE SUB rev$ (n$)
    CLS
    INPUT "Any string "; s$ CALL rev$(s$)
    END
```

```
SUB rev$ (s$)
FOR i = 1 TO LEN(s$) b$ = MID$(s$, i, 1) r$ = r$ + b$
NEXT i rev$ = r$
END SUB
```

4. **DECLARE FUNCTION SUM (a, b)**

```
REM Program to sum given two numbers
INPUT "Enter first number; x
INPUT "Enter second number"; y.
```

```
PRINT SUM (a, b)
END
```

```
FUNCTION SUM (x, y)
SUM = a + b
END
```

5. **CREATE FUNCTION Square (A)**

```
REM to print square of a number
    CLS
    GET "a number"; A CALL Square (A)
    END
```

```
    FUNCTION Square (A) Ans = A ^ 2
    Square = Ans END Square (A)
```

6. **DECLARE SUB Series ( )**

```
CLS
EXECUTE Series
END

SUB Series ()
   REM program to generate 1 1 2 3 4 5.....up to the 20th terms
   A=1
   B=1
   FOR ctr = 10 to 1
            DISPLAY A: B:
            A=A+B
            B=A+B
   NEXT ctr
END Series ( )
```

7. **REM to convert the given number in reverse order**

```
DECLARE FUNCTION rev(a)
CLS:
INPUT"Enter a number";a
CALL rev(a)
Print"Reverse=";re
END

FUNCTION rev$(a)
WHILE a<>o
r=a MOD 2
```

```
s=s*10+ r
a=a/10
WEND
Rev=s
END SUB
```

8. REM to add record in an existing file

```
CLS
OPEN "Record.Dat" FOR OUTPUT AS #1
AA:
INPUT "Enter Name, Class and Roll No. "; Nm$, Cl, Rn
INPUT #2, Nm$, Cl, Rn
INPUT "More records "; Y$
IF UCASE$(Y$) = "Y" THEN GOTO aa
CLOSE "Rrecord.dat"
END
```

9. REM multiple of 3 and 5 between any two supplied numbers

```
DECLARE SUB DISPLAY(A,B)
CLS
INPUT "Type any two number";A,B
PRINT DISPLAY(A,B)
END
SUB DISPLAY(X,Y)
IF X<Y THEN SWAP X,Y
FOR I%=X TO Y
IF I%MOD 3=0 OR I% MOD 5=0 THEN
PRINT X;
END IF
NEXT I%
END SUB
```

10 REM TO ADD MORE DATA IN A SEQUENTIAL DATA FILE

```
OPEN"EMP.DAT" FOR INPUT AS #2
DO
INPUT "ENTER NAME";N$
INPUT "ENTER ADDRESS";A$
INPUT "ENTER SALARY";S$
WRITE #1, N$, A$, S
INPUT "DO YOU WANT TO ADD MORE RECORDS";M$
LOOP WHILE UCASE(M$)="Y"
END
```

Analytical Questions

Study the following program and answer the given questions:

1. **DECLARE SUB SUM (N)**

```
INPUT "ANY Numbers"; N
CALL SUM (N)
END
SUB SUM (N)
S = 0
WHILEN<>0
    R=NMOD10
    S=S+R
    N=N\10
WEND
PRINT "SUM"; S
END SUB
```

1. In which condition will the statements within the WHILE....WEND looping statement not be executed?
2. Will the output be same if the place "\" instead of "/" in the above program?

2. **DECLARE FUNCTION count (N$)**

```
INPUT "Enter a word"; R$
C = count (R$)
PRINT
C END
FUNCTION count (N$)
FOR K = 1 TO LEN (N$)
X$ = MID$ (N$, K, 1)
    IF UCASE$ (X$) = "A"
        Then X=X+1
END IF
NEXT k
count = X
END FUNCTION
```

a. List any two library functions used in the above program.

b. Write the use of variable 'C' in line 3[i.e. C = Count(R$)] given in the above program.

3. **DECLARE FUNCTION XYZ(N)**

```
FOR I = 1 To 5
    READ N Z
    = xyz (N)
    S=S+Z
NEXT I
```

```
PRINT S
DATA 10, 13, 15, 4,
6 END
```

```
FUNCTION xyz (N)
IF N MOD 2 = 0 THEN xyz = N
END FUNCTION
```

i. What is the name of function used in the above program?

ii. How many times will the function be called?

4. **DECALRE FUNCTION Num (N)**

```
INPUT N
S=Num (N)
PRINT S
END
FUNCTION Num (N)
X=INT (17/N)
Y=15 MOD N
Num=X+Y
END FUNCTION
```

a. Write the name of the function used in the above program?

b. List out the mathematical function (Library) used in the above program?

5. **DECLARE Sub check ()**

```
CLS
CALL check
END
SUB check
c$ = "APPLE" c = 1
DO
    b$ = MID$(c$, c, 1)
    d$ = d$ + b$
c = c + 1
LOOP WHILE c <= 5
PRINT d$
END SUB
```

a. What will be the output of the above program?

a) ELPPA b) Blank Screen c) 0 d) None of them

b. What will be the output of the above program if the line LOOP WHILE c <= 5 is replace with LOOP UNTIL c >= 5?

6. **Declare function xyz(N)**

```
FOR I = 1 to 5
READ N
```

```
Z=xyz(N)
S=S+Z
NEXT I
PRINT S
DATA 10,13,15,4,6
END

Function xyz(N)
IF N MOD 2 = 0 THEN
xyz=N
End Function
```

(a) What is the name of function used in the program?

(b) How many times will the function be called?

7. **Declare function count(N$)**

```
Input "Enter a word ", R$
C=count(R$)
PRINT C
END

Function count(N$)
For K = 1 to LEN(N$)
X$=MID$(N$,K,1)
IF UCASE$(X$) = "A" then
X=X+1
End if
Next K
Count=X
End Function
```

(a) List any two library functions used in program.

(b) Write the use of variable "C" in line 3[i.e. C=count(R$)] given in program.

8. **Declare sub SUM(N)**

```
Input "Enter any number" , N
Call SUM (N)
END

Sub SUM(N)
S=0
WHILE N <>0
R=N MOD 10
S=S + R
N =N \10
```

```
WEND
Print "Sum" ; S
End Sub
```

(a) In which condition will the statements within WHILE ... END looping statement not be executed?

(b) Will the output be same if the place " \ " instead of " / " in the above program?

9. Declare function chk$ (N)

```
CLS
N=57
PRINT "The number is "; chk$(N)
END

Function chk$ (N)
FOR I = 1 TO N
IF N MOD I = 0 THEN C=C+1
NEXT I
IF C>2 THEN
a$= "Composite"
ELSE
a$= "Prime"
END IF
chk$=a$
End Function
```

(a) Will the above program execute if "Declare function ..." is deleted?

(b) Why $ sign is used in the name of the function?

10. OPEN "EMP.DAT" FOR INPUT AS #1

```
DO
INPUT #1,N$,A$,S
IF UCASE$(A$) = "KATHMANDU" THEN
PRINT N$,A$,S
END IF
LOOP WHILE NOT EOF(1)
CLOSE #1
END
```

(a) Write the use of statement "INPUT #1,N$,A$,S" in the above program.

(b) What happens if you remove "UCASE$" from the above program?

11. OPEN "DATA.TXT" FOR OUTPUT AS #1

```
INPUT "ENTER NAME , CLASS AND ATTENDANCE" , N$,CL,A
WRITE #1,N$,CL,A
INPUT "MORE RECORDS";Y$
IF Y$="Y" THEN GOTO TOP
```

```
CLOSE #1
END
```

(a) Why the file is opened in output mode?

(b) What will happen if the label top is placed above the OPEN statement?

Dry Run and Output.

Write the output of the given program (Workout with a dry run)

1.

```
DECLARE FUNCTION SUM (a)
CLS
a = 9
PRINT SUM (a)
END
FUNCTION SUM (a)
FOR K = 1 TO a
IF K MOD 2 = O THEN
S = S + K
END IF
NEXT K
SUM = S
END FUNCTION
```

2.

```
DECLARE FUNCTION SQD(N)
CLS
S = 0
FOR L = 1 TO 3
READ NUM
S = S +SQD (NUM)
NEXT L
PRINT " Sum" ; S
DATA 2,4,6
END
FUNCTION SQD (N)
SQD = N^2
END FUNCTION
```

3.

```
DECLARE SUB series ( )
CALL series
END
SUB series
X = 1
FOR K = 1 TO 4
PRINT X;
```

```
    X = X + K
    NEXT K
    END SUB
```

4.
```
    DECLARE SUB REMINDER (R)
    CLS
    FOR I = 1 TO 4
    READ X
    CALL REMINDER (X)
    NEXT I
    DATA 56,28,8,48
    END

    SUB REMINDER (R)
    R1 = R MOD 4
    R2 = R MOD 3
    IF R1 = 0 AND R2<> 0 THEN
    PRINT R
    END IF
    END SUB
```

5.
```
    DECLARE FUNCTION NUMPRO(A AS INTEGER, B AS INTEGER)
    DIM N, M, S AS INTEGER
    CLS
    DATA 2,5
    READ M%,N%
    S = NUMPRO(N%, M%)
    PRINT "Sum of all the values is";S
    END
    FUNCTION NUMPRO(A AS INTEGER,B AS INTEGER)
    S = 0
    FOR C=1 TO A%
      PRINT C*B%
      S = S + C * B%
   NEXT C
   NUMPRO=S
   END FUNCTION
```

6.
```
   DECLARE SUB PAT (A)
   A= -144
   CALL PAT (A)
   END

   SUB PAT(A)
```

```
B=ABS(A)
C= SQR(B)
D=C MOD 2
PRINT A, B, C, D
END SUB
```

7. **DECLARE SUB SERIES ( )**

```
CLS
CALL SERIES
END

SUB SERIES ( )
A = 1
B = 1
PRINT A; B;
X:
LET C = A + B
PRINT C
LET A = B
LET B = C
IF C <= 8 THEN GOTO X
END
```

8. **DECLARE SUB Result()**

```
CLS
CALL Result
END
SUB Result
A=1
FOR I = 1 TO 5
PRINT I*A
A=A+(10^I)
NEXT I
END SUB
```

9. **DECLARE SUB Show ( )**

```
CLS
CALL Show
END
SUB Show
C=3
B=2
FOR I=2 TO 8 STEP 2
```

```
PRINT C,
SWAP B, C
B=C+1
NEXT I
END SUB
```

10. **DECLARE SUB Result ( )**

```
CALL Result
END

SUB Result
For I = 1 to 9 STEP 2
Sum=Sum +I^2
Next I
PRINT Sum
END SUB
```

11. **DECLARE SUB Series ()**

```
CALL Series
END
SUB Series
X = 0
FOR K = 10 TO 4 STEP -2
A = K ^2
X = X + A
NEXT K
PRINT X
END SUB
```

12. **DECLARE FUNCTION CONVERSION(B)**

```
CLS
Z=1111
ANS= CONVERSION(Z)
PRINT"THE RESULT";ANS
END
FUNCTION CONVERSION(B)
P=0
DO WHILE B<>0
D= B MOD 10
E = D*2^P+E
B = INT(B/10)
P = P+1
LOOP
```

```
CONVERSION=E
END FUNCTION
```

13. **DECLARE FUNCTION TEST (A, B)**

```
CLS
X=2: Y=8
PRINT "THE RESULT IS"; TEST(X,Y)
END
FUNCTION TEST (A, B)
FOR J = A to B STEP 2
P=P+J
NEXT J
TEST = P
END FUNCTION
```

14. **DECLARE SUB PATT(A$)**

```
CLS
A$ = "*"
CALL PATT(A$)
END
SUB PATT(A$)
A = 10
FOR I = 1 TO 11 STEP 2
PRINT TAB(A); STRING$(I,A$)
A = A-1
NEXT
END SUB
```

15. **DECLARE SUB RESULT (S$)**

```
CLS
A$="PROGRAMMER"
CALL RESULT (A$)
END
SUB RESULT (A$)
FOR C= LEN (A$) TO 1 STEP -2
X$= MID$(A$, C, 1)
PRINT X$;
NEXT C
END SUB
```

Programming in C

Answer the following questions.

1. What is structured programming? Give any four examples of structured programming language.
2. Write the advantages of structured programming.
3. Write the features of C language.
4. List the data types supported by 'C' language.
5. Explain the structure of C program.
6. Differentiate between int and float data type in C.
7. Explain the different looping statements used in C.

Write the below program in C Language.

1. Write a program that asks any two numbers and find their sum.
2. Write a program that asks Principal Amount, Rate and Time and calculates Simple Interest.
3. Write a program that asks length & breadth of a room and calculates its area and perimeter.
4. Write a program that asks any two numbers and displays the smaller one.
5. Write a program to check whether the supplied number is divisible by 7 or not.
6. Write a program that asks your marks in Computer Science and checks whether you are pass or fail if the pass mark is 40.
7. WAP to find the greatest number among two numbers.
8. WAP to find the smallest number among three numbers.
9. WAP to find the sum of n natural number.
10. WAP to find the product of n natural number.
11. Write a program that asks any one integer and calculates the sum of its individual digits.
12. Write a program that asks any one integer and displays its reverse.
13. Write a program that asks any one integer and checks whether it is an Armstrong number or not.
14. Write a program that asks any one integer and calculates its factorial.
15. Write a program that asks any one integer and displays its factors.
16. Write a program to check whether the supplied number is prime or composite.
17. WAP to display the following Fibonacci series: 1 1 2 3 5.....to nth term.
18. Write down C program to generate the below series:
    i. 5, 10, 15, ... 50
    ii. 5, 10, 15, ... up to 50th terms
    iii. 1,2,4,8,16, ... up to 10th terms
    iv. 999, 728, 511, ... up to 10th terms
    v. 1,2,3,5,8,13,21, ... up to 10th term
    vi. 1
        22
        333
        4444
        55555

Dry Run and Output (Answer)

Do Dry Run in your copy and check your output below.

1. 20
2. Sum 56
3. 1 2 4 7
4. 56
   28
   8
5. 2
   4
   6
   8
   10
   Sum of all the values is 30
6. -144 144 12 0
7. 1 1 2
   3
   5
   8
   13
8. 1
   22
   333
   4444
   55555
9. 3 2 3 4
10. 165
11. 216
12. THE RESULT 15
13. THE RESULT IS 20
14. *
    ***
    *****
    ****
    ****
    ****
15. RMAGR

Full Form Collections

1. AARP : Apple Talk Address Resolution Protocol
2. AC/DC : Alternate Current/ Direct Current
3. ADSL : Asymmetric Digital Subscriber Line
4. AES : Advanced Encryption Standard
5. AI : Artificial Intelligent
6. AM : Amplitude Modulation
7. AMC : Annual Maintenance Contract
8. ANSI : American National Standard Institute
9. APC : American Power Conversion
10. ARCNET : Attached Resource Computer Network
11. ARP : Address Resolution Protocol
12. ARPA : Advanced Research Project Agency
13. ARPANET : Advanced Research Project Agency Network
14. ASCII : American Standard Code For Information Interchange
15. ASV : Approved Scanning Vendor
16. ATM : Automated Teller Machine
17. AVG : Anti-Virus Guard
18. AVI : Audio Video Interleave
19. B2B : Business to Business
20. B2C : Business to Consumer
21. BBS : Bulletin Board Service
22. BCC : Blind Carbon Copy
23. BIOS : Basic Input Output System
24. BIT : Binary Digit
25. BMP : Bit Map
26. BNC : British Naval Connector
27. Bps : Bit Per Second
28. C2C : Consumer to Consumer
29. CA : Certifying Authority
30. CAD : Computer Aided Design
31. CAI : Computer Aided Instruction
32. CAM : Computer Aided Manufacture
33. CAN : Computer Association Of Nepal/Campus Area Network
34. CAT : Computer Axial Topography
35. CAVE : Cave Automatic Virtual Environment
36. CBE : Computer Based Education
37. CBT : Computer Based Training
38. CCTV : Close Circuit Television
39. CD R/W : Compact Disk Read/Write
40. CD : Compact Disk

41. CDMA : Code Division Multiple Access
42. CD-ROM : Compact Disk Read Only Memory
43. CGA : Color Graphics Adaptor
44. CMOS : Complementary Metal Oxide Semiconductor
45. CoD : Cash on Delivery
46. CPAV : Central Point Anti-Virus
47. CPU : Central Processing Unit
48. CRT : Cathode Ray Tube
49. CSMA/CD : Carrier Sense Multiple Access / Collision Detection
50. CSU/DSU : Channel Service Unit/ Digital Service Unit
51. CUI : Character User Interface
52. CVIA : Computer Virus Industry Association
53. CVT : Constant Voltage Transformer
54. DARPA : Defense Advanced Research Project Agency
55. DHCP : Dynamic Host Configuration Protocol
56. DIX : Digital Intel Xerox
57. DLC : Data Link Control
58. DMV : Dahlia Mosaic Virus
59. DNS : Domain Name System
60. DOD : Department Of Defense
61. DSP : Digital Signal Processor
62. DSS : Data Security Standards/Data Satellite System
63. DTH : Direct To Home
64. DVD : Digital Versatile/Video Disk
65. EBCDIC : Extended Binary Coded Decimal Interchange Code
66. ECC : Error Correction Code
67. e-Com : Electronic Commerce
68. E-commerce : Electronic Commerce
69. E-commerce : Electronic Commerce
70. E-Commerce : Electronic Commerce
71. EDI : Electronic Data Interchange
72. E-fax : Electronic Facsimile
73. EFT : Electronic Fund Transfer
74. EFTPOS : Electronic Funds Transfer at Point of sale
75. EGA : Enhanced Graphics Adaptor
76. E-Gov : Electronic Governance
77. E-mail : Electronic Mail
78. E-MAIL : Electronic Mail
79. EMI : Electromagnetic Interference
80. ETA : Electronic Transaction Act
81. ETDSA : Electronic Transaction & Digital Signature Act

82. FAT : File Allocation Table
83. FIFO : First In First Out
84. FM : Frequency Modulation
85. FQDN : Fully Qualified Domain Name
86. FSK : Frequency Shift Keying
87. FTP : File Transfer Protocol
88. G2G : Government to Government
89. GIF : Graphic Interchange Format
90. GIGO : Garbage In Garbage Out
91. GPL : General Public License
92. GPRS : General Packet Radio Service
93. GPS : Global Positioning System
94. GSM : Global System For Mobile Communication
95. GUI : Graphical User Interface
96. HIPAA : Health Insurance Portability Accountability Act
97. HLCIT : High Level Commission For Information Technology
98. HMD : Head Mounted Display
99. HTML : Hyper Text Markup Language
100. HTTP : Hyper Text Transfer Protocol
101. IaaS : Infrastructure as a service
102. IAB : Internet Architecture Board
103. IBN : Interactive Broadband Network
104. IBT : Internet Based Training
105. ICT : Information Communication Technology
106. IDS : Intrusion Detection System
107. IEEE : Institute Of Electrical And Electric Engineers
108. IETF : Internet Engineering Task Force
109. IFIP : International Federation Of Information Processing
110. INIC : Internet Network Information Center
111. INTERNET : International Network
112. IoT : Internet of Things
113. IP : Internet Protocol
114. IPOS : Input Process Output System
115. IPS : Intrusion Prevention System
116. IPX/SPX : Internetwork Packet Exchange/Sequenced Packet Exchange
117. IRC : Internet Relay Chat
118. IRTF : Internet Research Task Force
119. ISAPI : Internet Server Application Programming Interface
120. ISD : International Telephony Service Provider
121. ISDN : Integrated Service Digital Network
122. ISOC : Internet Society

123. ISP : Internet Service Provider
124. ISP : Internet Service Provider
125. IT : Information Technology
126. ITSP : Internet Telephony Service Provider
127. JPEG : Joint Photographic Expert Group
128. Kbps : Kilo Byte Per Second
129. LAN : Local Area Network
130. LCD : Liquid Crystal Display
131. LED : Light Emitting Diode
132. MAC : Media Access Control
133. MAN : Metropolitan Area Network
134. MAPI : Messaging Application Programming Interface
135. MBPS : Mega Byte Per Second
136. MBR : Master Boot Recording
137. M-Commerce : Mobile Commerce
138. MIDI : Musical Instrument Digital Interface
139. MILNET : Military Network
140. MMS : Multimedia Message Service
141. MODEM : Modulator Demodulator
142. MOS : Mercantile Office Protocol
143. MOST : Ministry Of Science & Technology
144. MPCD : Metropolitan Police Crime Division
145. MPEG : Motion Picture Expert Group
146. MPPP : Multilink Point To Point Protocol
147. MSAU : Multi-Station Access Unit
148. MSAV : Microsoft Antivirus
149. MSB : Most Significant Bit
150. MSN : Microsoft Network
151. MUK : Multimedia Upgrade Kits
152. NAC : Network Access Control
153. NAT : Network Address Translation
154. NAV : Norton Anti-Virus
155. NCC : National Computer Center
156. NetBEUI : Network Bios Extended User Interface
157. NetBIOS : Network Basic Input Output System
158. NFS : Network File System
159. NIC : Network Interface Card
160. NIT : National Institute Of Technology
161. NITC : National Information Technology Center
162. NITDC : National Information Technology Development Council/Committee
163. NOC : Network Operating Center

164. NOS : Network Operating System
165. NSF : National Science Foundation
166. NTFS : New Technology File System
167. OCCA : Office Of The Controller Of Certifying Authority
168. OLE : Object Linking & Embedding
169. Pass : Platform as a Service
170. PAT : Port Address Translation
171. PC : Personal Computer
172. PCO : Public Call Office
173. PDA : Personal Digital Assistant
174. PDF : Portable Document Format
175. PIN : Personal Identification Number
176. PKI : Public Key Infrastructure
177. PM : Phase Modulation
178. PNG : Portable Network Graphics
179. POP : Post Office Protocol
180. POST : Power OnSelf-Test
181. PPP : Point To Point Protocol
182. PSK : Phase Shift Keying
183. PSTN : Public Switched Telephone Network
184. PSU : Power Supply Unit
185. PUK : Personal Unblocking Key
186. QBASIC : Quick Beginners' All-Purpose Symbolic Instruction Code
187. QoS : Quality of Service
188. RAM : Random Access Memory
189. RARP : Reserve Address Resolution Protocol
190. RF : Radio Frequency
191. RIP : Routing Information Protocol
192. RJ-45 : Registered Jack-45
193. ROM : Read Only Memory
194. RTF : Reach Text Format
195. RTP : Real Time Protocol
196. SaaS : Software as a service
197. SAV : Symantec Anti-Virus
198. SC : Subscriber Connector
199. SDSL : Symmetric Digital Subscriber Line
200. SHF : Super High Frequency
201. SIM : Subscriber Identity Module
202. SMA : Screw Mounted Adaptors
203. SMPS : Switched Mode Power Supply
204. SMS : Short Message Service

205. SMTP : Simple Mail Transfer Protocol
206. SMTP : Simple Mail Transfer Protocol
207. SNA : System Network Architecture
208. SPAM : Stupid/Short Pointless Annoying Message
209. ST : Straight Tip Connector
210. STD : Standard Trunk Dialing
211. STP : Shielded Twisted Pair
212. SVGA : Super Video Graphics Array
213. TCP/IP : Transmission Control Protocol / Internet Protocol
214. TEC : Thermo Electric Cooler
215. TELNET : Terminal Emulation Link Network
216. TIFF : Tagged Image File Format
217. UHF : Ultra High Frequency
218. UNCITRAL : United Nations Commission On International Trade Law
219. UPS : Un-Interruptible Power Supply
220. URL : Uniform Resource Locator
221. USB : Universal Serial Bus
222. USP : Universal Serial Port
223. UTP : Un-Shielded Twisted Pair Cable
224. VCC : Video Capture Card
225. VCD : Video Compact Disk
226. VGA : Video Graphics Array
227. VHF : Very High Frequency
228. VIRUS : Vital/Very Information Resources Under Seize
229. VOIP : Voice Over Internet Protocol
230. VPN : Virtual Private Network
231. VPPA : Video Privacy Protection Act
232. VR : Virtual Reality
233. VRML : Virtual Reality Modeling Language
234. VSAT : Very Small Aperture Terminal
235. W3C : World Wide Web Consortium
236. WAIS : Wide Area Information Server
237. WAN : Wide Area Network
238. WAP : Wireless Application Protocol
239. WI-FI : Wireless Fidelity
240. WiMAX : Worldwide Interoperability For Microwave Access
241. WLAN : Wireless Local Area Network
242. WSH : Windows Scripting Host
243. WWW : World Wide Web

Set-wise Questions

Set [redacted]

Group – 'A' [10 Marks]

1. **Answer the following Questions in very short answer.[6x1=6]**
   a. "Internet is called network of network." Justify in your own language.
   b. Draw a diagram of bus topology.
   c. What is validation rule?
   d. What is the function of KILL statement in QBASIC?
   e. What is data redundancy?
   f. What isloop or looping?

2. **Write appropriate Technical Term for the following.** **[2x1=2]**
   a. The technology to encode file or message
   b. Data transmission mode in which data transmits both directions simultaneously

3. **Write the Full form of the following.** **[2x1=2]**
   i. NIC ii. AI

Group -'B' [24 Marks]

4. **Answer the following Questions in short answer.[9x2=18]**
   a) What is internet? Write down its advantages and disadvantages.
   b) Write any two goals of IT policy of Nepal 2072.
   c) What is anti-virus software? Write down any two examples of anti-virus software.
   d) List out the e-governance services that exit in Nepal.
   e) What is mobile computing? Write down its application.
   f) What is data sorting?
   g) Define Query? Write its types.
   h) DefineRDBMS.Write two examples of it.
   i) List any four data types used in MS-Access.

5. **Write down the output of the given program. Show with dry run-in table.** **[2]**

```
DECLARE SUB series ( )
CALL series
END
SUB series
X = 1
FOR K = 1 TO 4
PRINT X;
X = X + K
NEXT K
END SUB
```

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

```
DECLARE SUB SUM (N)
INPUT "Any Number"; N
PRINT SUM (N)
END

SUB SUM (N)
S = 0
WHILE N = 0
R = R MOD 10
S = S+R
N = N/10
WEND
PRINT "Sum of digits"; s
```

7. **Study the following program and answer the given questions:** [2x1=2]

```
OPEN "DATA.TXT" FOR OUTPUT AS #1
INPUT "ENTER NAME , CLASS AND ATTENDANCE" , N$,CL,A
WRITE #1,N$,CL,A
INPUT "MORE RECORDS";Y$
IF Y$="Y" THEN GOTO TOP
CLOSE #1
END
```

a. Why the file is opened in output mode?

b. What will happen if the label top is placed above the OPEN statement?

Group- 'C' [16marks]

Answer the following questions in long answer.

8. Convert/calculate as per the instruction [4x1=4]

i. $(1001100010)_2$ to Hexadecimal conversion

ii. $(105)_{10}$ to Binary conversion

iii. $(10011 + 1110)_2 - (100)_2$

iv. $(101101)_2 \div (101)_2$

9. a. WAP a program in QBASIC that allows user to enter length and breadth of a rectangle. Create a user defined function to find area of rectangle and sub procedure to find perimeter of square. [Hint: A=lb P=4l] [4]

b. Write a program to create a sequential data file name "Library.txt" and store name,address, class and roll_no of a few students. [4]

10. WAP that input any two numbers and check the greatest number among three numbers. [4]

OR

WAP that input any number and checks input number is divisible by 6 but not by 13. [4]

"The End"

Set [redacted]

Group – 'A' [10 Marks]

1. **Answer the following Questions in very short answer.[6x1=6]**
   a. What is a computer network? How it is useful?
   b. Define Firewall.
   c. What is foreign key?
   d. What is the storage size of Auto number in DBMS?
   e. What is the use of EOF( ) function ?
   f. Write the features of C language.

2. **Write appropriate Technical Term for the following. [2x1=2]**
   a. A device which converts analog signal to digital codes and vice versa
   b. The amount of data that can be transmitted through communication channels in a fixed time period.

3. Write the Full form of the following. [2x1=2]
   i. VR ii. B2B

Group -'B' [24 Marks]

4. Answer the following Questions in short answer.[9x2=18]
   a) Give reasons that "Computer network reduces the cost of operation."
   b) What do you mean by digital divide?
   c) What is a backup? Why is backup vital to computer security system?
   d) What is the most futuristic technology? Discuss your views.
   e) What are the types of cloud computing services?
   f) List any four advantages of primary key.
   g) What is a database? What are the elements of a database?
   h) List any two major differences between forms and reports.
   i) What is query? List any two uses of query?

5. Write down the output of the given program. Show with dry run-in table. [2]

```
DECLARE SUB PATTERN()
CALL PATTERN
END
SUB PATTERN
FOR I = 1 TO 5
FOR J= 1 TO I
  PRINT J;
NEXT J
PRINT
NEXT I
END SUB
```

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

```
DECLARE FUNCTION reverse$(N$)
INPUT "Any string";N$
X$=reverse$(N$)
PRINT N$
END
FUNCTION reverse(N$)
L=LEN$(N$)
FOR X=L TO 1 STEP-1
A$=MID$(N$,X,1)
B$=B$+A$
NEXT X
B$=reverse$(N$)
END FUNCTION
```

7. Study the following program and answer the given questions: [2x1=2]

```
Declare function count(N$)
Input "Enter a word ", R$
C=count(R$)
PRINT C
END

Function count(N$)
For K = 1 to LEN(N$)
X$=MID$(N$,K,1)
IF UCASE$(X$) = "A" then
X=X+1
End if
Next K
Count=X
End Function
End
```

a. List any two library functions used in above program.

b. Write the use of variable "C" in line 3[i.e. C=count(R$)] given in the above program.

Group- 'C' [16marks]

Answer the following questions in long answer. **[4x1=4]**

8. Convert/calculate as

i. $(524)_8$ to Decimal equivalent

ii. $(1E1)_{16}$ to Decimal Conversion

iii. $1001 + 110)_2 - (1000)_2$

iv. $(1000100)_2 \div (1100)_2$

9. a. WAP a program in QBASIC that allows user to enter radius of a circle. Create a user defined function to find area of circle and sub procedure to find Volume of a cylinder. [4]
[Hint: A=πr2 and V=πr2h]

b. Write a Program to display only name and percentage of students from student.txt who secured distinction [Assume distinction is 80% and above] [4]

10. WAP which reads any two numbers and displays the Smallest one.[4]

OR

WAP a program to find the square root of a number using c program.[4]

"The End"

Set

Group-A [10x1=10]

1. **Answer the following questionsin one sentence:** **(6x1=6)**
   a. What is an e-mail?
   b. What is social media?
   c. Which data type is suitable to store photographs of students in MS- Access?
   d. Which view is used to modify a table structure in MS-Access?
   e. Which statement is used to call sub-procedure?
   f. Write any two data types used in C languages?
2. Write appropriate technical term of the following:(2x1=2)
   a. A system of copying data and information residing in computer into another location.
   b. A company which provides services of Internet.
3. Write the full form of the following: (2X1=2)
   a. FTP b. LAN

Group-B[12x2=24]

4. **Answer the following questions:** **(9x2=18)**
   a. What is computer network?
   b. Define software security. Write any two protection measures for it.
   c. What is a search engine? Write any two popular search engines.
   d. Define e-commerce. Write any two benefits of it.
   e. Write any two advantages and disadvantages of social media.
   f. What is DBMS? Write any two advantages of it.
   g. What is primary key? Write any two features of it.
   h. Define field and record.
   i. What is query? List out its type.
5. **Write the output of the given program:(Workout with a dry run)** **(2)**

```
DECLARE SUB seri()
CLS
CALL seri
END
```

```
a$="SCIENCE"
b=LEN(a$)
   FOR j=1 to 4
         PRINT TAB(i); MID$(a$ ,i, b)
         B=b-2
   NEXT i
END SUB
```

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

```
REM to convert the given number in reverse order
DECLARE FUNCTION rev(a)
CLS:
INPUT"Enter a number";a
CALL rev(a)
Print"Reverse=";re
END

FUNCTION rev$(a)
WHILE a<>o
r=a MOD 2
s=s*10+ r
a=a/10
WEND
Rev=s
END SUB
```

7. **Study the following program and answer the given questions. (2x1=2)**

```
DECLARE FUNCTION TEST (X)
X=100
Z=TES(X)
PRINT Z
END

FUNCTION TEST (X)
    FOR R=1 TO X
        S=S+1
    NEXT R
    TEST=S
END FUNCTION
```

Questions:

a. Write the name of the function used in above program?

b. How many times does the statement S=S+1 execute in the above program?

Group-C[4x4=16]

8. Convert/ Calculate as per instruction: (4x1=4)

   i) $(11111101)_2 = (?)_{16}$ ii) $(245)_{10} = (?)_2$

   iii) $(1010)2 \times (101)_2 = (?)_2$ iv) $(101110)_2 \div (110)_2$

9. Answer the following question:

   a. Write a program in qbasic that ask the radius of a circle and calculate the area and circumference of a circle. Create a user-defined function to calculate area and sub-procedure to calculate circumference of a circle. (4)

   b. Write a program to create a sequential data file "employee.dat" to store programmer's name, salary and post according to the need of user. (4)

10. Write a C-program that asks a number and check whetherit is negative, positive or zero.(4)

OR

Write a program in C-language to display first 10 odd numbers.

END

Set 4

Group-A [10x1=10]

1. **Answer the following questions in one sentence:** (6x1=6)

   a) Write the name of any two web browsers.

   b) What is cyber law?

   c) What is the field size of Yes/No field?

   d) Write any two objects of MS-access.

   e) What is Modular programming?

   f) Write any two format specifier used in C language.

2. **Write appropriate technical term for the following::** (2x1=2)

   a) Buying and selling of goods through Internet.

   b) A type of network in which each computer can act as a server as well as client.

3. **Write the full form of the following:** (2X1=2)

   a. G2B. b. WAN

Group-B[12x2=24]

4. **Answer the following questions:** (9x2=18)

   a) Write any two advantages of computer network.

   b) What is digital footprint? Write any two tips to maintain digital reputation.

   c) What is password policy? Write any two important criteria for creating a strong password.

   d) What is m-commerce? Write any two advantages of it.

   e) What is IoT? Write any two advantages of it.

   f) Define DBMS? Write any two examples of database.

   g) What is MS Access? Write any two advantages of it.

h) Define Form. Write any two uses of it

i) What is data type? Write some data types of MS Access.

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

```
DECLARE SUB ABC (A)
CLS
A=2
CALL ABC (A)
END
SUB ABC (A)
        FOR J=1 TO 5
                PRINT A;
                A=A+3
        NEXT J
END SUB
```

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

```
DECLARE SUB Series ( )
CLS
EXECUTE Series
END

SUB Series ()
   REM program to generate 1 1 2 3 4 5.....up to the 20th terms
   A=1
   B=1
   FOR ctr = 10 to 1
          DISPLAY A: B:
          A=A+B
          B=A+B
   NEXT ctr
END Series (')
```

7. **Study the following program and answer the given questions.** (2x1=2)

```
CLS
OPEN "employee.dat" FOR OUTPUT AS #5
Top:
INPUT " Enter Name"; n$
INPUT " Enter Address"; a$
INPUT " Enter Phone Number"; p
WRITE #5, n$, a$, p
INPUT" Do you want to continue(Y/N)?"an$
```

```
IF UCASE$(an$)="Y" THEN GOTO top
CLOSE #5
END
```

Questions:

a) List two variables used in above program.

b) What is the name of the data file used in above program?

Group-C[4x4=16]

8. Convert / Calculate as per the instruction:(4x1=4)

a) $(1100111)_2$ into Decimal.

b) $11110_2 + 1011_2$

c) $(2AF)_{16}$ into Binary

d) 110_2 divided by 110_2

9. a. Write a program in QBASIC that asks length, breadth of a room and calculate its area and perimeter. Create a user- defined function to calculate the area and sub program to calculate perimeter. [HINT: AREA=L X B}, P=2*(L+B)] (4)

b. Write a programto update the rate by increasing 10% from a sequential data file "Data. dat" that store item name, rate and quantity. (4)

10. Write a program in C language to calculate even, odd and zero number. (4)

OR

Write a C program to find the sum of first 10 even numbers. (4)

-The End-

Set

Group-A [10x1=10]

1. **Answer the following questions in one sentence:** **(6x1=6)**

a. What is search engine?

b. What is e-commerce?

c. Which data type is used to store numeric characters or special symbols inMS-Access?

d. Which view is used to modify a table in MS-Access?

e. What is Modular Programming?

f. C language was developed by whom and when.

2. **Write appropriate technical term for the following:** **(2x1=2)**

a. Operating system that can handle network

b. Data transmission mode in which data transmits only one direction at a time.

3. **Write the full form of the following:** **(2X1=2)**

a. STP

b. WiFi

Group-B[12x2=24]

4. **Answer the following questions:** **(9x2=18)**

a. Write about star topology with diagram.

b. Write any four commandments of computer ethics.

c. Write any four measures for hardware security.
d. What is m-Commerce? Write its two important services.
e. What are the types of cloud computing services?
f. What is database object? List any four database objects.
g. What is foreign key?
h. What is data sorting? List any two advantages of using it.
i. What types of work is done in MS-Access using Form and query object?

5. **Write the output of the given program:(Workout with a dry run)** **(2)**

```
DECLARE SUB MIN(A,B)
CLS
A=5
B=10
CALL MIN(A,B)
END
SUB MIN(A,B)
IF A<B THEN
C=A+5
PRINT C
ELSE PRINT B ^ 2
END IF
END SUB
```

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

```
REM multiple of 3 and 5 between any two supplied numbers
DECLARE SUB DISPLAY(A,B)
CLS
INPUT "Type any two number";A,B
PRINT DISPLAY(A,B)
END
SUB DISPLAY(X,Y)
IF X<Y THEN SWAP X,Y
FOR I%=X TO Y
IF I%MOD 3=0 OR I% MOD 5=0 THEN
PRINT X;
END IF
NEXT I%
END SUB
```

7. **Study the following program and answer the given questions. (2x1=2)**

```
OPEN "Detail.dat" FOR INPUT AS #1
OPEN "Temp.dat" FOR OUTPUT AS #2
INPUT "Enter name of the students "; Sn$
```

```
FORI=1TO10
INPUT #1, Nm$, Cl, A
IF Sn$ <> Nm$ THEN
WRITE #2, Nm$, Cl, A
END IF
NEXT I
CLOSE #1, #2
KILL "Detail.dat"
NAME "Temp.dat" AS "Detail.dat"
END
```

a. What is the main objective of the program given above?

b. Do you get any problem in the above program if "Kill" statement is removed? Give reason.

Group-C[4x4=16]

8. **Convert/ Calculate as per instruction:** **(4x1=4)**

i) $(11001101)_2 = (?)_{16}$ ii) $(524)_{10} = (?)_2$

iii) $(1010)_2 \times (110)_2 - (1011)_2 = (?)_2$ iv) $(10110)_2 \div (101)_2$

9. Answer the following question

a. Write a program in QBASIC that asks length, breadth and height of room and calculates its area and volume. Create a user-defined function to calculate area andsub-program to calculate volume. Hint: [A = LxB], [V = LxBxH] (4)

b. A sequential data file called "Record.txt" has stored data under the field heading Roll No., Name, Gender, English, Nepali, Maths and Computer. Write a program to display all the information of those students whose gender is 'F' and obtained marks in computer is more than 90. (4)

10. Write a program in C language that asks a number and check whether it is odd or even. (4)

OR

Write a program in 'C' language to display the series with their sum. 1,2,3,4,.....,up to 10th terms. (4)

-END-

Set [redacted]

Group-A [10x1=10]

1. **Answer the following questions in one sentence:** **(6x1=6)**

a. What is computer network?

b. Define cyber ethics.

c. What do you mean by validation rule?

d. Define database in MS-Access.

e. What is Procedural programming?

f. Write any two features of C language.

2. **Write the appropriate technical terms for the following:** (2X1=2)
   a. Law that governs the legal issues of cyber space.
   b. The smallest unit to represent information on quantum computer.
3. **Write full form of the following:** (2X1=2)
   a. WWW
   b. TCP/IP

Group "B" [24 Marks]

4. **Answer the following question:** (9x2=18)
   a. Write short note on bus topology with proper diagram.
   b. Define the term Internet. List its any two services.
   c. Define ICT policy of Nepal with its two mission and vision.
   d. List some points about how we can protect our data
   e. Define the term digital footprint. Explain its types.
   f. List any four types of field properties used by MS-Access.
   g. Define form. What are the advantages of form over the table?
   h. List any four data type supported by MS-Access.
   i. What are the advantages of modular programming?

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

```
DECLARE SUB SHOW (A)
CLS
N=87
CALL SHOW (N)
END
SUB SHOW (A)
DO
B=AMOD6+3
IF B MOD 4 = 0 THEN GOTO AA
PRINT B;
AA:
A=A-10
LOOP WHILE A >= 50
END SUB
```

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

```
REM to add record in an existing file
CLS
OPEN "Record.Dat" FOR OUTPUT AS #1
AA:
INPUT "Enter Name, Class and Roll No. "; Nm$, Cl, Rn
INPUT #2, Nm$, Cl, Rn
INPUT "More records "; Y$
```

```
IF UCASE$(Y$) = "Y" THEN GOTO aa
CLOSE "Rrecord.dat"
END
```

7. **Study the following program and answer the give question: (2x1=2)**

```
DECLARE FUNCTION XYZ(N)
CLS
A=135 : B=A
A=XYZ(A)
PRINT "THE RESULT IS",
IF X=B THEN PRINT "OK"
ELSE
PRINT "NO"
END
FUNCTION XYZ(N)
DO WHERE N>0
RE=N MOD 10
N=N/10
T=N*10+RE
LOOP XYZ=T
END FUNCTION
```

a. Can we replace the fourth line of the program X=XYZ(A) by X=XYZ(131) or not? Differentiate between X=XYZ(A) and XYZ(131).

b. If the value of variable N=7 then what will be the value of variable RE?

Group "C" [16Marks]

8. Number system (Conversion/Calculation): (4x1=4)

a. $(457)_8 = (\ ?\ )_{10}$

b. $(1100011101)_2 = (\ ?)_{16}$

c. $(10110)_2 \times (11)_2 - (10011)_2$

d. $(10110+11000)_2 \div (101)_2$

9. a. Using Function... End Function, write a program to calculate the volume of hemisphere. [Volume=2/3 pie R^2].

b. A sequential data file "salary.dat" contains the information, employee-code, employee-name, post, and basic salary. Write a program to display those records whose basic-salary is between 10000 to 15000 and post is 'officer'.

10. Write a program in C language that asks a number and check whether it is positive or negative.

Or

Write a program in C language to display the series with their sum 7,22,11,34..... up to 10th terms.

-The End-

Set [redacted]

Group-A [10x1=10]

1. **Answer the following questionsin one sentence:** **(6x1=6)**
   a. Define bandwidth.
   b. What is cybercrime?
   c. Write any two opportunities and two threats in social media.
   d. What is the storage size of memo and text data type in MS-Access?
   e. What is local variable?
   f. What is an operator in C language?

2. **Write appropriate technical term of the following:** **(2x1=2)**
   a. Secret group of characters which helps to protect file from unauthorized person.
   b. law regarding the Internet and cyber space.

3. **Write the full form of the following:** **(2X1=2)**
   a. MoDem b. TCP/IP

Group-B[12x2=24]

4. **Answer the following questions:** **(9x2=18)**
   a. Differentiate between LAN and WAN.
   b. Define cyber bullying with any two examples.
   c. What is e-commerce? List any two e-commerce companies in Nepal.
   d. List some areas where AI can help us and how?
   e. What is Virtual Reality? Mention its application areas.
   f. Differentiate between data and information.
   g. List any two features of MS-Access.
   h. Define datasheet with examples.
   i. What is query? List the different types of query.

5. **Write the output of the given program:(Workout with a dry run) (2)**

```
DECLARE SUB NUMBER ()
CLS
CALL NUMBER
END
SUB NUMBER
N=3:C=1
WHILE C<=5
    PRINT N
    N=N*10+3
    C=C+1
WEND
END SUB
```

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

```
REM TO ADD MORE DATA IN A SEQUENTIAL DATA FILE
OPEN"EMP.DAT" FOR INPUT AS #2
DO
INPUT "ENTER NAME";N$
INPUT"ENTER ADDRESS";A$
INPUT"ENTER SALARY";S$
WRITE #1,N$,A$,S
INPUT "DO YOU WANT TO ADD MORE RECORDS";M$
LOOP WHILE UCASE(M$)="Y"
END
```

7. **Study the following program and answer the given questions.** (2x1=2)

```
DECLARE FUNCTION TEXT$(A$)
CLS
INPUT "ENTER ANY WORD"; T$
PRINT TEXT$(T$)
END
FUNCTION TEXT$(A$)
FOR M=LEN(A$) TO 1 STEP -1
C$=C$+MID$(A$,M,1)
NEXT M
TEXT$=C$
END FUNCTION
```

a. List all the parameters used in the program given above.

b. List the library function used in the above program.

Group-C[4x4=16]

8. **Convert/ Calculate as per instruction:** (4x1=4)

i) $(3CA)_{16}$ into binary

ii) $(655)_{10}$ into Hexadecimal

iii) $(10101\text{-}1110)_2 \times 10_2$

iv) $(111011)_2 \div (100)_2$

9. **Answer the following question:**

a. Write a program in QBASIC that allows user to enter radius of a circle. Create a user defined function to find area of circle and sub procedure to find volume of a cylinder. Hint:[A=Pir2, V=Pir2h] (4)

b. A sequential data file" emp.txt" contains employee's name,address, post and salary.WAP to display all the information of employees whose salary is more than Rs 20,000. (4)

10. Write a program in C language to input any number and find its factorial. (4)

OR

WAP to check whether an entered number by user is divisible by 13 or not.

-END-

Set 8

Group –'A' [10 Marks]

1. **Answer the following Questions in very short answer.** [6x1=6]
   a. What are three models of Network?
   b. What is VR?
   c. Name any two DBMS software
   d. What is Table in DBMS?
   e. What is global variable?
   f. Write any two keywords used in C.

2. **Write appropriate Technical Term for the following.** [2x1=2]
   a. Operating system that can handle network
   b. A raw fact about anything which does not give any complete meaning

3. **Write the Full form of the following.** [2x1=2]
   i. Bit ii. GPS

Group -'B' [24 Marks]

4. **Answer the following Questions in short answer.** [9x2=18]
   a) Write down any four preventive measures of computer software security.
   b) Explain the different types of E-Commerce.
   c) Write about star topology with suitable diagram.
   d) What are the advantages of cloud computing?
   e) What is Internet of Things? Describe with examples.
   f) Differentiate between database and DBMS.
   g) Define indexing. Mention its importance.
   h) Write two differences between Select query and Action query.
   i) Why form is required in MS-Access?

5. **Write down the output of the given program. Show with dry run in table.** [2]

```
DECLARE SUB DISPLAY(A)
CLS
A=3
CALL DISPLAY(A)
END
SUB DISPLAY(A)
FOR X=1 TO 6
PRINT A:
IF A MOD 2=0 THEN
A=A/2
ELSE
A=(A*3)+1
END IF
```

```
NEXT X
END SUB
```

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

```
DECLARE FUNCTION SERIES()
CLS
EXECUTE SERIES
END
SUB SERIES ()
A=2
B=2
FOR CTR=1 TO 5
DISPLAY A;B;
A=A+B
B=B+A
NEXT CTR
END SUB
```

7. **Study the following program and answer the given questions:** [2x1=2]

```
Declare function xyz(N)
FOR I = 1 to 5
READ N
Z=xyz(N)
S=S+Z
NEXT I
PRINT S
DATA 10,13,15,4,6
END

Function xyz(N)
IF N MOD 2 = 0
THEN xyz=N
End Function
```

a. What is the name of user defined function used in the above program?

b. How many times will the function be called?

Group- 'C' [16marks]

Answer the following questions in long answer.

8. **Convert/calculate as per the instruction** [4x1=4]

i. $(110011)_B = (?)_H$ ii. $(8018)_{10} = (?)_8$

iii. $(10011 \times 11)_2 - (1101)_2$ iv. $(100110)_2 \div (110)_2$

9. a. WAP to input length of a cube and calculate its volume using function and area of four

walls using sub procedure[Hint: V = l3, A= 4l2]

b. A sequential data file" Patient.txt" contains name of patient, disease, age and bed no. WAP to display only records whose name starts with "R". [4]

10. Write a program to check whether the supplied number is divisible by 7 or not. [4]

OR

WAP to calculate and display sum of the number from 1 to 10. [4]

"The End"

Set [redacted]

Group –'A' [10 Marks]

1. **Answer the following Questions in very short answer.[6x1=6]**
   a. What is communication media?
   b. What is hacking?
   c. Which data type is used to store numeric characters or special symbols in MS-Access?
   d. What is the report?
   e. What is function-procedures?
   f. Why C is called middle level programming language?

2. **Write the Full form of the following.** [2x1=2]
   a) URL b) PIN

3. **Write appropriate Technical Term for the following.** [2x1=2]
   a. A device that controls two dissimilar networks
   b. A memorized secret used to confirm the identity of a user

Group -'B' [24 Marks]

4. **Answer the following Questions in short answer.[9x2=18]**
   a) Differentiate between bounded and unbounded media.
   b) Share your thoughts about cyberbullying.
   c) Define Encryption and Decryption.
   d) What is Online Payment? Write two types of online payment gateway used in Nepal.
   e) Give some examples of IoT devices and their applications?
   f) What is the importance of Query in database?
   g) What are the components of database?
   h) What is primary key? Why is it important to specify?
   i) Define datasheet with examples.

5. **Write down the output of the given program. Show with dry run-in table.** [2]

```
DECLARE SUB exam(x)
CLS
FOR i = 1 TO 5
```

```
    READ x
    CALL exam (x)
  NEXT i
  DATA 2, 3, 4, 5, 6
  END
  SUB exam (x)
    PRINT x^2;
  END SUB
```

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

```
DECLARE SUB Series ()
CLS
EXECUTE Series
END

SUB Series
REM program to print 4  8  12  20 .... 20th terms
X = 4
Y = 4
FOR ctr = 10 to 1
DISPLAY X;Y;
X=X+Y
Y=X+Y
Next ctr
End Series
```

7. Study the following program and answer the given questions: [2x1=2]

```
Declare function chk$ (N)
CLS
N=57
PRINT "The number is "; chk$(N)
END

Function chk$ (N)
FOR I = 1 TO N
IF N MOD I = 0 THEN C=C+1
NEXT I
IF C>2 THEN
a$= "Composite"
ELSE
a$= "Prime"
END IF
chk$=a$
```

End Function

a. Will the above program execute if "Declare function ..." is deleted?

b. Why $ sign is used in the name of the above function?

Group- 'C' [16marks]

Answer the following questions in long answer.

8. Convert/calculate as per the instruction **[4x1=4]**

i. $(101010)_2$ to Decimal Conversion

ii. $(BCD)_{16}$ to Binary Conversion

iii. $(1001 + 110)_2 - (1000)_2$

iv. $(1010 \times 110)_2 \div (10)_2$

9. a. WAP to input radius of a circle and calculate its area using function and circumference using sub procedure. [Hint: A=πr2 and C=2πr] [4]

b. WAP to create a sequential datafile name "library.txt" and store name, address, class and roll_no until user press Y. [4]

10. Write a program that asks Principal Amount, Rate and Time and calculates Simple Interest in C language.

OR

WAP to display the following fibonaccei series; 1 1 2 3 5 .....to nth term [4]

"The End"

Set 10

Group –'A' [10 Marks]

1. Answer the following Questions in very short answer.[6x1=6]

a. What is duplex mode of communication?

b. Define digital citizenship?

c. Define filtering.

d. What does data type mean in database?

e. Define main-module.

f. Give any two examples of structured programming language.

2. Write appropriate Technical Term for the following. **[2x1=2]**

a. The kind of harmful computer code or web script designed tocreate system vulnerabilities.

b. A port on the back of the system unit to connect a computer in network.

3. Write the Full form of the following. **[2x1=2]**

i. IoT

ii. ATM

Group -'B' [24 Marks]

4. Answer the following Questions in short answer.[9x2=18]

a) Mention differences between client/server architecture and peer to peer architecture of the network.

b) What is a digital footprint? Write some of the examples of digital footprint.

c) What is a power protection device? Write its role in computer security.

d) Write two differences between Traditional Commerce Vs e-commerce.

e) What is Upload and Download?

f) Explain data sorting. List any two advantages of using it.

g) Differentiate between Select query and Action query

h) What is the report? Mention the two importance of creating report indatabase.

i) Define freezing and unfreezing the column?

5. Write down the output of the given program. Show with dry run-in table. [2]

```
DECLARE SUB SERI ()
CLS
CALL SERI
END
SUB SERI
A=1
B=1
FOR I=1 TO 3
    PRINT A; B;
    A=A+B
    B=A+B
NEXT I
END SUB
```

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

```
REM to create a new data file
CLS
OPEN "ABC.DAT" FOR INPUT AS #1
DO
INPUT "Enter Name, Roll No and Total"; N$,R,T
INPUT #1, N$, R, T
INPUT "Supply more records Y/N";Ch$
LOOP WHILE UCASE(Ch$)="Y"
CLOSE #1
END
```

7. Study the following program and answer the given questions: [2x1=2]

```
Declare function Num (N)
INPUT N
S=Num (N)
PRINT S
END

Function Num (N)
X = INT (17/N)
```

Y= 15 MOD N

Num=X+Y

End Function

a. Write the name of the function used in above program.

b. List out the mathematic function (Library) used in above program.

Group- 'C' [16marks]

Answer the following questions in long answer.

8. Convert/calculate as per the instruction **[4x1=4]**

i. $(4414)_{10}$ to Octal

ii. $(101010)_2$ to Hexadecimal equivalent

iii. $(100110 + 11100)_2 - (11110)_2$

iv. $(10110+11000)_2 \div (110)_2$

9. a. WAP to input length, breadth and height of a cuboid and calculate its volume using function and area of four walls using sub procedure. [Hint: v=lbh and A=2h(l+b)] [4]

b. A sequential datafile "Patient.txt" contains name of patient, disease, age and bed no. Write a program to display only records of "Mahesh". [4]

10. Write a program to find factorial of a number using c. [4]

OR

WAP to reverse an entered number using c language. [4]

"The End"

Technical Term (Answer)

Networking and Telecommunication

1. Modem
2. Local Area Network (LAN)
3. Topology
4. Node
5. Gateway
6. Incoming Mail Server (e.g. POP, IMAP)
7. Server
8. Network Operating System
9. Optical Fiber / Fiber Optic Cable
10. Computer Network
11. Internet
12. Email / Electronic Mail
13. Ecommerce/Electronic Commerce
14. Search Engine
15. LAN Port / Ethernet Port
16. Simplex Mode
17. Duplex Mode
18. Bandwidth
19. Protocol
20. Workstation
21. Repeaters
22. Hub
23. Routers

Ethical and Social Issues in ICT

1. Computer Ethics
2. Cyber Ethics
3. Digital Citizenship
4. Digital Footprint
5. Cyber law
6. Ethics

7. Digital Access
8. Cyber Law
9. ICT (Information and communications technology, or technologies)
10. Electronic Transaction Act (ETA)
11. Virtual Community
12. ETA (Electronic Transaction Act)
13. Human Behavior and Emerging Technology
14. Digital Recording
15. Digital Commerce
16. Digital Communication
17. Digital literacy
18. Digital Security
19. Digital Health
20. Digital Law

Computer Security

1. Phishing
2. Keyloggers
3. Cyber Law
4. White Hat Hacker / A Computer Hacker
5. Malicious Code/ Virus
6. Authentication System
7. Password
8. Virtual Community
9. Biometric Verification
10. Firewall
11. Encryption
12. Malware
13. Adware
14. Antivirus software
15. Cloud Storage

Ecommerce

1. E-Commerce
2. Business-to-Consumer
3. Business-to-Business (B2B)
4. Consumer-to-Consumer (C2C)
5. M-Commerce
6. Online payment/e-payment

Contemporary Technology

1. Cloud Computing
2. Cloud Computing
3. Google Drive/icloud
4. Artificial Intelligence (AI)
5. Virtual Reality (VR)
6. E-Governance
7. Mobile computing
8. Google Drive
9. Apple iCloud
10. IoT (Internet of Things)

Database Management System

Creating Database

1. Caption
2. Caption
3. Validation rule
4. Default value
5. Primary key

-END-