

COMPUTER SCIENCE (OPTIONAL SECOND) CURRICULUM

Issued by Curriculum Development Centre, Sanothimi, Bhaktapur, Nepal

S.N.	Content	Period
	Computer Fundamentals: Networking and Telecommunication Computer Security Computer Virus Cyber law Multimedia and its Application Number System	[22 periods]
1.1		
1.2		
1.3		
1.4		
1.5		
1.6		
2.1	Database Management System Introduction	[32 periods]
2.2	Creating Database using MS Access	
2.3	Entering and Editing Data	
2.4	Querying and Editing Data	
2.5	Creating and Using Forms	
2.6	Creating and Printing	
3.1	QBASIC Control Statement (using with procedures and file handling)	[88 period]
3.2	Library Function	
3.3	Function and Sub-procedures	
3.4	File Handling	
3.5	Project in QBASIC Program	
4.1	Structured Programming Introduction	[8 period]
4.2	Simple Program Structure in C	
4.3	Comparisio of program structured of C and QBASIC	

SPECIFICATION GRID

Subject: Computer Science
Time: 1 hr 30 Minutes

Full Marks: 50
Pass Marks: 16

	Types of Questions	Topics	No. of Questions	Marks
Group A (Fundamentals)				
Subjective	1.a. 1.b. 1.c. 1.d. 1.e. 2	- Computer Network & Tele Communication - E-Mail and Internet - Multimedia & Applications - Cyber Law and Ethics - Computer Security - Computer Virus - Number System a) Conversions b) binary Calculations	2×2 1×2 2×2 2×1 2×1	4 2 4 4 4
Objective	3 4 5 6	- Matching - Multiple Choice/True & False - Technical Terms - Full forms	16×0.5	8
Subjective	7.(a,b) 7. c	Group B (Database) - Introduction - Creating Database - Entering & Editing Data - Querying Database - Creating & Using Forms - Creating & Printing Reports	2×2 1×2	4 2

4. Objective	8. - Multiple Choice/True and False 9. - Matching	8 × 0.5	4
Group C (Programming)			
5. Subjective	10. - Conceptual Questions (QBASIC/C Language) (a,b,c) - Function and Use of QBASIC Statements - Debug - Output - Analytical Type - Writing Program QBASIC C-Programming	2 × 1 1 × 1 1 × 2 1 × 2 2 × 1 3 × 3	2 1 2 2 2 9
Note: (a) In writing program one question from FUNCTION or SUB program (b) Conceptual Questions from C-Language should be asked from the following topics: - Introduction - Data Types - Simple features of C-Language			
Total		46	50

For External Practice Exam

Time: 1.00 hrs

Full Marks: 25
Pass Marks: 10

S.N.	Group/Area	Topics	No. of questions	Marks
1.	Group 'A' MS-Access (10 Marks)	Structure of table & data entry Query Form/Report	1 + 1 1 + 1 1	2 + 2 2 + 2 2
2.	Group 'B' QBASIC Programming (15 Marks)	FUNCTION ... END FUNCTION AND SUB... END SUB File handling	3 × 3 2 × 3	9 6
		Total	10	25

Note:
- One/One question from SUB and FUNCTION must be simple type (without Looping)
- One question from file handling must be simple.

Internal Practice Exam

S.N.	Topics	Question	Weightage	Total
1.	QBASIC	5	5 × 3 = 15	15
2.	Database	5	5 × 2 = 10	10
	1 Hour	10	25	25

Note: Internal practice marks (25) should be included in the final exam and it also includes project work. The project work also should be evaluated in internal practice exam by teachers themselves.

MODEL QUESTIONS**Issued by CDC**

Subject: Computer Science
Time: 1 hr 30 Minutes

Full Marks: 50
Pass Marks: 16**समूह 'क' (Group 'A')****Computer Fundamental (22 Marks)**

1. तलका प्रश्नहरूको उत्तर दिनुहोस्: (Answer the following questions:) [5×2=10]
- क. कम्प्युटर नेटवर्कलाई परिभासित गर्नुहोस्। (Define Computer Network.)
- ख. इन्टरनेट र ईमेल भनेको के हो? लेख्नुहोस्। (What is Internet and E-mail?)
- ग. मल्टिमीडिया प्रयोग गरिने कुनै चार क्षेत्रहरूको नाम लेख्नुहोस्। (Write down any four application areas of multimedia.)

- घ. कम्प्युटर सफ्टवेयरलाई जोगाउने कुनै चारओटा उपायहरू लेख्नुहोस्। (List out any four measures to protect computer software.)
- झ. कम्प्युटरलाई भाइरसबाट कसरी जोगाउन सकिन्छ? लेख्नुहोस्। (How can we protect computer from virus? Write.) [2×1=2]
2. क. निर्देशन दिइएनुसार बदल्नुहोस् (Convert as instructed):
- i. (235)₈ into decimal
 - ii. (BA5)₁₆ into binary
- ख. बाइनरी हिसाब गर्नुहोस्। (Perform binary calculation.)
- i. $10^*11+101$
 - ii. Divide 1011 by 10₂

गोदा मिलाउनुहोस्:	(Match the following:)	[4×0.5=2]
Group A	Group B	
Microwave	Multimedia	
UPS	Protocol	
Sound Card	Unguided Media	
TCP/IP	Power	
	Protection Device	

मुँक उत्तर छनोट गर्नुहोस्: (Select the correct answer:) [2]
कुनचाहिं नेटवर्क हार्डवयर कम्पोनेन्ट होइन ? (Which is not the network hardware component?)

- i. HUB
- ii. Repeater
- iii. Router
- iv. Windows NT

कुन सञ्चार माध्यममा डाटा प्रकाश सिग्नलका रूपमा प्रसारण हुन्छ ? (In which communication media does data travel in the form of light signal?)

- i. Telephone wire
- ii. Fiber optic
- iii. Coaxial Cable
- iv. Twisted pair cable

कुनचाहिं प्रोटोकल होइन ? (Which is not the protocol?)

- i. TCP/IP
- ii. IPX/SPX
- iii. NETBIOS/NETBUI
- iv. Client

कुनचाहिं एन्टीबाइरस प्रोग्राम हो ? (Which is the Anti-virus program?)

- i. Photoshop
- ii. NAV
- iii. Windows XP
- iv. MS-Excel

सम्पूर्ण प्राविधिक शब्द लेख्नुहोस्: (Give appropriate technical terms of the following:) [4×0.5=2]

अनलाइनमा गरिने सामानहरूको खरिद विक्री र सेवा (Buying and selling products and services online)

लेनमा तार जडान गर्ने ढाँचा (Cabling structure of LAN)

कम्प्युटरहरूको सम्ह जसले साधन तथा स्रोतको वाँडचुँड गर्न सक्छन्। (Group of computers that can share resource.)

एउटा प्रोग्राम जसले अरू प्रोग्रामलाई विगार्दछ। (A program that destroys the other program.)

गा. तल लेख्नुहोस् (Write full forms:) [4×0.5=2]

- a. UPS
- b. WWW
- c. WAN
- d. DVD

समूह 'ख' (Group 'B')

Database (10 Marks)

गोदा प्रश्नहरूको उत्तर लेख्नुहोस् (Answer the following questions in short:) [3×2=6]

डिविएमएस भनेको के हो ? (What is a DBMS?)

माइक्रोसफ्ट एक्सेसमा प्रयोग हुने कुनै चारओटा डाटा प्रकारहरूको नाम लेख्नुहोस् ? (Make a list of any four types of data used in Microsoft Access?)

मेरीलाई परिभाषित गर्नुहोस्। (Define Query.) [4×0.5=2]

मुँक उत्तर छान्नुहोस्: (Select the correct answer:)

The maximum text field size in Access is

- i. 50
- ii. 10
- iii. 256
- iv. 255

The extension of database file in Access is

- i. .DBF
- ii. .MDB
- iii. .DMB
- iv. .DBM

..... uniquely identifies any field.

- i. Index
- ii. Memo Field
- iii. Primary Key
- iv. Query

The object of Access that stores the data is known as

- i. Query
- ii. Table
- iii. Form
- iv. Report

[4×0.5=2]

9. जोडा मिलाउनुहोस्:	(Match the following:)	
Group A	Group B	
Indexing data	Retrieves data	
Long text	DBMS	
Fox Pro	Memo field	
Query	Searching fast	
	Report	

समूह 'ग' (Group 'C')
Programming (18 Marks)

10. क. युजर डिफाइन्ड फँक्सन भनेको के हो ? (What is a user-defined function?) [1]

ख. सी लेडवेजमा प्रयोग हुने कुनै दुई प्रकारको डाटा प्रकारहरूको नाम लेख्नुहोस्। (List any two data types used in C language.) [1]

ग. तलका स्टेटमेन्टहरूको कार्य लेख्नुहोस्: (Write down the function of the following statements:) [1]

- i. KILL
- ii. MKDIR

11. तल दिएको प्रोग्रामको आउटपुट लेख्नुहोस्: (Write the output of the given program:) [2]

DECLARE SUB Result ()

CALL Result

END

SUB Result

N=5

C=1

WHILE C<=5

PRINT N

N=N*10+5

C=C+1

WEND

END SUB

12. तल दिएको प्रोग्रामका गल्तीहरूलाई सच्याई पुनः लेख्नुहोस्: (Rewrite the given program after correcting the bugs): [2]

REM To store name and age in a sequential data file STD.DOC

OPEN STD.DOC FOR OUT AS#1

INPUT"ENTER NAME ";N

INPUT"ENTER AGE";A

WRITE I,N\$,A

CLOSE #1

END

13. तलको प्रोग्राम अध्ययन गरी सोधिएका प्रश्नहरूको उत्तर लेख्नुहोस्: (Study the following program and answer the given questions:) [2×1=2]

DECLARE FUNCTION A(X)

X=5

Z=A(X)

PRINT Z

END

FUNCTION A(X)

FOR i= 1 TO X

S=S+i

NEXT I

$\Lambda=S$

END FUNCTION

- (a) माथिको प्रोग्राममा कतिओटा प्यारामिटर प्रयोग गरिएको छ ?
(How many parameters are used in the program?)
- (b) माथिको प्रोग्राममा कतिपटक $S=S+1$ लाइन दोहोरिन्छ ?
(How many times does the statement $S=S+1$ execute in the above program?)

14. क. FUNCTION.....END FUNCTION को प्रयोग गरी सिलिन्डरको आयतन पता लगाउने एउटा प्रोग्राम लेख्नुहोस्।
(Write a program to calculate the volume of a cylinder using FUNCTION.....END FUNCTION.) [3]

Hints: Volume = $\pi R^2 H$

YEAR BASED QUESTIONS

Exam 2075

समय : १:३० घण्टा

पूर्णाङ्क : ५०

समूह 'क' (Group 'A')

Computer Fundamental (22 Marks)

1. तलका प्रश्नहरूको उत्तर दिनुहोस्। (Answer the following questions): [5×2=10]
- क. Guided Media का कुनै दुईओटा विशेषता लेख्नुहोस्।
(Write any two features of Guided Media.)
- ख. Internet का कुनै चारओटा फाइदाहरू लेख्नुहोस्। (Write any four advantages of Internet.)
- ग. मल्टिमिडिया भनेको के हो ? (What is multimedia?)
- घ. Password ले कसरी data को सुरक्षा गर्दछ ? (How Password secure the data?)
- ड. कम्प्युटर भाइरसबाट कम्प्युटरलाई बचाउने कुनै दुई उपायहरू लेख्नुहोस्। (Write any two preventive measures to protect computer from computer virus.)

2. क. निर्देशनबनुसार रूपान्तर गर्नुहोस्। (Perform the conversion as per the direction): [2×1=2]

- i. $(217)_{10}$ into Binary
ii. $(39C)_{16}$ into Decimal

- ख. Binary हिसाब गर्नुहोस्। (Perform the binary calculation): [2×1=2]

- i. 1011×11
ii. $110111 - 11001$

3. जोडा मिलाउनुहोस्। (Match the following): [4×0.5=2]

Group A

Group B

- | | |
|-----------|-------------------------------|
| a. HUB | i. Communication Media |
| b. TCP/IP | ii. Network connection device |
| c. UTP | iii. Windows NT |
| d. NOS | iv. Protocol |
| e. LAN | v. Computer security |

4. तल दिइएका प्रश्नहरूको सबैभन्दा मिल्ने उत्तर ढाँचाहोस्। (Choose the best answer of the following): [4×0.5=2]

- क. कम्प्युटर नेटवर्कको भौतिक संरचना। (The physical structure of Computer Network.)
- i. Protocol ii. Topology
iii. MAN iv. Cabling
- ख. कुनचाहिं इन्टरनेटको सेवा होइनन्। (Which is not an Internet service.)
- i. E-commerce ii. NIC
iii. www iv. E-mail
- ग. कुनचाहिं कम्प्युटर भाइरस होइन्। (Which is not a computer virus?)

- घ. SUB....END SUB. को प्रयोग गरी दिइएको कुनै नम्बर धनात्मक या अग्नात्मक के हो ? सो पता लगाउने एउटा प्रोग्राम लेख्नुहोस्। (Write a program to test whether the given number is positive or negative using SUB....END SUB.) [3]

- ग. केही विद्यार्थीहरूका नाम, अड्योजी, गणित र विज्ञान विद्यायहरूमा पाएको नम्बर कम्प्युटरलाई उपलब्ध गराई रियर्वेसियल डाटा फाइल "std.dat" मा भण्डार गर्ने एउटा प्रोग्राम लेख्नुहोस्। (Create a sequential data file "std.dat" to store Name and Mark obtained in English, Math and Science subjects for a few students.) [3]

i. kaspersky ii. message carrying virus

iii. Boot sector virus iv. Program virus

- घ. टोपोलोजी जसमा कम्प्युटरहरू केन्द्रमा रहेका HUB अथवा switch डिभाइसमा जोडिएका हुन्छन्। (Topology where all the computer are connected to a central connecting device; HUB or switch.)

i. BUS ii. STAR

iii. TREE iii. RING

5. उपयुक्त प्राविधिक शब्दहरू लेख्नुहोस्। (Write the appropriate technical terms of the following): [4×0.5=2]

- क. कम्प्युटर नेटवर्कमा जोडिएका शक्तिशाली कम्प्युटर जसले अऱ कम्प्युटरलाई नियन्त्रण र समन्वय गर्दछ। (A powerful computer which controls and co-ordinates all computers connected in a network.)

- ख. सञ्चारका माध्यमबाट प्रति सेकेन्डमा प्रवाह हुने bits को परिमाण (The volume of bits that can be transferred per second through the communication media.)

- ग. फाइल तथा डाटाको प्रतिलिपि बनाउने। (Making duplicate copy of file or data.)

- घ. कम्प्युटर तथा इन्टरनेटका माध्यमबाट गरिने अवैधानिक कार्यहरू। (Illegal activities committed through the use of computer and Internet.)

6. पूर्ण रूप लेख्नुहोस्। (Write the full form): [4×0.5=2]

- i. STP ii. PDF
iii. NIC iv. IRC

समूह 'ख' (Group 'B')

Database (10 Marks)

7. तलका प्रश्नहरूको उत्तर लेख्नुहोस्। (Answer the following questions): [3×2=6]

- क. डाटावेश स्पानेजमेन्ट सिस्टमका कुनै दुईओटा फाइदाहरू लेख्नुहोस्। (Write any two advantages of Database Management system.)

- ख. प्राइमरी कि भनेको के हो ? (What is primary key?)

- ग. फर्मका कुनै दुईओटा कार्यहरू लेख्नुहोस्। (Write any two functions of form.)

8. ठीक बेठीक छुट्याउनुहोस्। (State whether the following statements are true or false): [4×0.5=2]

- क. Currency डाटा प्रकारका साईज १० बाइट हुन्छ। (The size of currency data type is 10 Bytes.)

- ख. डाटा भर्दा validation rule ले नियन्त्रण गर्दछ। (Validation rule will limit data entry.)

- ग. रेकर्डहरूलाई घट्दो र घट्दो कममा मिलाउने कार्यलाई Indexing भनिन्छ। (Indexing is the process of arranging the records in ascending or descending order.)

प्र. तोकिएको टेबुलवाट रेकर्डहरू खोल्ने र हेन्का लागि Select query प्रयोग गरिन्छ । (Select query is used to retrieve and display records from the selected table.)

जोडा मिलाउनुहोस् । (Match the following): [4×0.5 = 2]

Group 'A'

a. Yes/No i. 4 Bytes

b. Long Integer ii. Ms Access object

c. OLE iii. Picture

d. Report iv. 1 Bit

v. 8 Bytes

समूह 'ग' (Group 'C')

Programming (18 Marks)

10. a. Logical operators को परिभाषा लेख्नुहोस् । (Define logical operators.) [1]

b. Structure programming को कुनै दुईओटा फाइदाहरू लेख्नुहोस् । (Write any two advantages of structure programming.) [1]

c. Command /statements का कार्यहरू लेख्नुहोस् । (Write the function of the following command/statements;)

i. FILES ii. WRITE [1]

11. तलको program मा भएका गल्तीहरूलाई सच्चाएर पुनः लेख्नुहोस् । (Re-write the given program after correcting the bugs): [4×0.5=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

2. तल दिइएको program को output लेख्नुहोस् । (Write the output of the following program): [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

13. तलको Program को अध्ययन गरी दिइएका प्रश्नहरूको उत्तर लेख्नुहोस् । (Study the following program and answer the given questions): [2×1=2]

DECLARE SUB SUM (N)

 N = 5

 CALL SUM (N)

END

SUB SUM (N)

 FOR X = 1 TO N

 S = S + X

 NEXT X

 PRINT S

END SUB

क. माथिको प्रोग्राममा FOR ... NEXT loop कति पटक कार्यन्वयन हुन्छ ? (In the above program how many times does the FOR ... NEXT loop executes?)

ख. माथिको program मा प्रयोग भएको procedure को नाम लेख्नुहोस् । (Write the name of the procedure used in the above program.)

14. a. तीनओटा दिइएका नम्वरहरूको औसत निकाले प्रोग्राम लेख्नुहोस् । (Write a FUNCTION procedure to calculate the average of three numbers using FUNCTION procedure.) [3]

ब. दिइएको शब्दवाट vowels अधरहरूको संख्या प्रिन्ट गर्न वाट प्रोग्राम SUB procedure प्रयोग गरी लेख्नुहोस् । (Write a program to print the total number of vowels alphabets present in the given word using SUB procedure.) [3]

c. "STAFF.dat" फाइलमा केही कर्मचारीहरूको (EmPID, First name, Lastname, post and salary भण्डारण गरिएका) छन् । उक्त डाटा फाइलको रेकर्डहरू देखाउने प्रोग्राम लेख्नुहोस् । जसको salary 40,000 भन्ना वढी छ ! (A data file "STAFF.dat" has stored records of few employees with EmPID, First name, Last name, post and salary. Write a program to display all the records of the employees whose salary is more than 40,000.) [3]

Exam 2075 (Province No. 2)

समय : १:३० घण्टा

पूर्णाङ्क : ५०

समूह 'क' (Group 'A')

Computer Fundamental (22 Marks)

1. तलका प्रश्नहरूको उत्तर दिनुहोस् । (Answer the following questions): [5 × 2 = 10]

क. कम्प्युटर नेटवर्कका कुनै दुई फाइदा र वेफाइदा उल्लेख गर्नुहोस् । (Write any two advantage and disadvantage of computer Network.)

ख. E-mail को परिभाषा लेख्नुहोस् । (Define E-mail.)

ग. Cyber Law भनेको के हो ? (What is cyber Law?)

घ. कम्प्युटर सुरक्षा भन्नाले के बुझिन्छ ? सफ्टवर सुरक्षाको कुनै दुई उपायहरूको सूचीकृत गर्नुहोस् । (What is computer security? List any two ways of software security.)

ड. कम्प्युटर भाइरस सर्ने कुनै दुई माध्यमहरू लेख्नुहोस् । (Write any two ways in which computer virus may get transmitted.)

२. क. निर्देशनअनुसार रूपान्तर गर्नुहोस् : [2 × 1 = 2] (Perform the conversion as per the direction.)

i. (FA)₁₆ into Binary ii. (420)₁₀ into octal.

ख. Binary हिसाब गर्नुहोस् । (Perform the binary calculation): [2 × 1 = 2]

i. 1111 × 10 ii. 1101 + 101

३. जोडा मिलाउनुहोस् । (Match the following): [4 × 0.5 = 2]

Group 'A'

a. Back up

b. Microphone

c. Web browser

d. E-commerce

Group 'B'

i. online shopping

ii. duplicate

iii. damage of corrupt data

iv. multimedia

v. display web pages

४. ठीक बेटीक छुट्याउनुहोस् : (State whether the following statements are true or false): [4 × 0.5 = 2]

क. नेटवर्क प्रणालीमा विद्युत आपूर्ति नहुना Router ले विद्युत आपूर्ति गर्दछ । (Router provides power backup if there is power cut in the network system.)

ख. Boot sector virus ले program files लाई असर गर्दछ । (Boot sector virus infects the program files.)

12. तल दिइएको program को output लेख्नुहोस् । (Write the output of the following program:) [2]

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

13. तलको program को अध्ययन गरी दिइएका प्रश्नहरूको उत्तर दिनुहोस् : (Study the following program and answer the given questions:) [2x1=2]

DECLARE FUNCTION TEST (X)

X = 100

Z = TEST (X)

PRINT Z

END.

FUNCTION TEST (X)

FOR I = 1 TO X

S = S + I

NEXT I

TEST S

END FUNCTION

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

b. माथिको प्रोग्राममा कतिचोटी $S = S + I$ स्टेटमेन्ट एकजुक्युट हुन्छ ? (How many times does the statement $S = S + I$ get executed in the above program.)

14. a. FUNCTION END FUNCTION को प्रयोग गरी प्रयोगकर्तावाट कुनै शब्द लिएर त्यस शब्दलाई उल्टाएर छापे प्रोग्राम लेख्नुहोस् । (Write a program using FUNCTION..... END FUNCTION to get a word from the user and then print the word in reverse order.) [3]

b. SUB...END SUB को प्रयोग गरेर बृतको क्षेत्रफल निकाल्ने प्रोग्राम लेख्नुहोस् । (Write a program using SUB... END SUB to find the area of circle.) [3]

c. "SEE.DAT" भन्ने Sequential data file मा Symbol No., Name English, Nepali, Maths र Computer field हरूमा data भण्डार गरेर रखिएको छ । त्यस data file वाट कम्प्युटर विषयमा अङ्क ८० भन्दा माथि भएका विद्यार्थीहरूको सम्पूर्ण record print गर्ने प्रोग्राम लेख्नुहोस् । (A Sequential data file called "SEE.DAT" has stored data under the field heading Symbol No., Name, English, Nepali, Maths and Computer. Write a program to display all the information of those students whose marks in Computer is more than 80.) [3]

समय : १:३० घण्टा

समूह 'क' (Group 'A')

Computer Fundamental (22 Marks)

1. तलका प्रश्नहरूको उत्तर दिनुहोस् । (Answer the following questions): [5x2=10]

क. कम्प्युटर नेटवर्कको परिभाषा लेख्नुहोस् । (Define computer network.)

ख. Internet को परिभाषा लेख्नुहोस् । (Define Internet.)

ग. कम्प्युटर प्रणालीलाई सुरक्षित राख्नको लागि power protection उपकरणको महत्त्ववारे उल्लेख गर्नुहोस् । (Write the importance of power protection device to protect the computer system.)

घ. कम्प्युटर भाइरस भनेको के हो ? कम्प्युटरमा भाइरस लागेपछि देखिने कुनै दुईओटा लक्षणहरू उल्लेख गर्नुहोस् । (What is computer virus? Mention any two symptoms that can be seen when a computer is infected by computer virus.)

ङ. साइबर अपराध भनेको के हो ? कुनै दुईओटा उदाहरण दिनुहोस् । (What is cybercrime? Give any two examples.)

2. क. निर्देशनअनुसार रूपान्तर गर्नुहोस् । (Perform the conversion as per the direction): [2x1=2]

i. $(523)_{10}$ into Binary

ii. $(2074)_8$ into hexadecimal.

ख. Binary हिसाब गर्नुहोस् । (Perform the binary calculation): [2x1=2]

i. 110×101

ii. $111010 + 110$

3. जोडा मिलाउनुहोस् । (Match the following): [4x0.5=2]

Group A

a. RJ 45 connector

b. Back up

c. Microphone

d. Hub/switch

Group B

i. Duplicate copy

ii. Multimedia

iii. Twisted pair cable

iv. Ring Topology

v. Star Topology

4. तल दिइएका प्रश्नहरूको सबैभन्दा मिल्ने उत्तर ढानुहोस् । (Select the best answer of the following): [4x0.5=2]

क. तल दिइएका मध्ये कुनचाहिँ नेटवर्क प्रोटोकल होइन ? (Which of the following is not a network protocol?)

i. POP

iii. TCP/IP

ii. FTP

iv. NOS

ख. तल दिइएका मध्ये कुनचाहिँ सफ्टवेयर फोटो सम्पादनको लागि प्रयोग गरिन्छ ? (Which of these software is used for photo editing?)

i. Ms-Excel

iii. Power-point

ii. Photoshop

iv. Ms-Word

ग. तल दिइएका मध्ये कुनचाहिँ उपकरण उही प्रोटोकल प्रयोग गर्न धेरै नेटवर्कहरू जाइनका लागि प्रयोग गरिन्छ ? (Which device is used to connect multiple networks that uses the same protocol.)

i. Bridge

iii. Switch

ii. NIC

iv. Gateway

घ. छरिएर रहेका फाइलका भागहरूलाई एकीकृत गर्ने प्रक्रिया (Process of arranging the scattered files into a contiguous manner.)

i. Scandisk

iii. Defragmentation

ii. Backup

iv. Debugging

उपयुक्त प्राविधिक शब्दहरू लेखुहोस्। (Write the appropriate technical terms of the following): [4×0.5=2]

- लोकल एरिया नेटवर्को physical layout. (The physical layout of local area network.)
- Internet को माध्यमवाट गरिने व्यापार। (The business conducted through Internet.)
- कम्प्युटर तथा इन्टरनेटको प्रयोग गरी गरिने अपराधलाई नियन्त्रण गर्ने कानून। (The law which controls the crime which is done with the help of computer and Internet.)
- कुनै कम्प्युटर वा उपकरण जसले कम्प्युटर नेटवर्कका अरू कम्प्युटरलाई विभिन्न सेवा प्रदान गर्दछ। (A computer or device which provides different services to other computers connected to the network.)

पूर्ण रूप लेखुहोस्। (Write the full form): [4×0.5=2]

- SMTP
- WAN
- URL
- VOIP

**समूह 'B' (Group 'B')
Database (10 Marks)**

1. तलको प्रश्नहरूको उत्तर लेखुहोस्। (Answer the following questions): [3×2=6]

- डेटाबेसको परिभाषा लेखुहोस्। (Define Database.)
- Data redundancy भनेको के हो ? यसलाई कसरी कम गर्न सकिन्छ ? (What is data redundancy? How can it be reduced in database?)
- Ms-Access मा प्रयोग गर्न सकिने कुनै चार प्रकारका data type हरू उल्लेख गर्नुहोस्। (Mention any four data types that can be used in Ms-Access.)

3. ठीक उत्तर छान्नुहोस्। (Select the correct answer): [4×0.5=2]

- तल दिइएका मध्ये कुनचाहि primary key ले स्वीकार गर्दैन ? (Which of the following is not accepted by primary key?)
 - Number
 - Text
 - Null value
 - None
- डेटाबेस टेबलको row हरूलाई के भनिन्छ ? (What is called rows in database table?)
 - Field
 - Record
 - Form
 - None
- सबैभन्दा कम storage space प्रयोग गर्ने एउटा data type कुन हो ? (Which data type consumes the least storage space?)
 - Text
 - Yes/No
 - OLE object
 - Memo
- Ms-Access को default data type कुन हो ? (Which is the default data type of Ms-Access?)
 - Memo
 - Number
 - Text
 - Auto number

9. जोडा मिलाउनुहोस्। (Match the following): [4×0.5 = 2]

Group 'A'

- Data
 - Form
 - Report
 - Table
- Input, view, edit data
 - Formatted output
 - Collection of raw facts
 - Question to the database
 - Stores data in database

समूह 'G' (Group 'C')

Programming (18 Marks)

- Formal parameter भनेको के हो ? (What is formal parameter?)
- C प्रोग्रामिङ त्याइग्वेजमा प्रयोग गरिने कुनै दुइओटा data type हरू उल्लेख गर्नुहोस्। (List any two data types used in C programming language.)
- KILL र CLOSE स्टेटमेन्टहरूको कार्य लेखुहोस्। (Write the function of KILL and CLOSE statements.)

- तलको program मा भएको गल्तीहरूलाई सत्याएर पुन लेखुहोस्। (Re-write the given program after correcting the bugs): [4×0.5=2]

REM TO find the factorial of a given number.

DECLARE FUNCTION FACTO (N\$)

CLS

INPUT "Enter a number", X

PRINT "The Factorial is:", FACTO (N)

END

FUNCTION FACTO (N)

F=1

WHILE N = 0

F = F*N

N = N - 1

WEND

F = FACTO

END FUNCTION

- तल दिइएको program को output लेखुहोस्। (Write the output of the following program): [2]

DECLARE SUB Display (T\$)

CLS

T\$ = "COMPUTER"

CALL Display (T\$)

END

SUB Display (T\$)

FOR C = 1 TO LEN (T\$) STEP 2

D\$ = MIDS (T\$, C, 1)

PRINT D\$;

NEXT C

END SUB

- तलको Program को अध्ययन गरी दिइएका प्रश्नहरूको उत्तर लेखुहोस्। (Study the following program and answer the given questions): [2×1=2]

DECLARE FUNCTION SUM (N)

CLS

INPUT "Enter any number", N

S = SUM (N)

PRINT "The Sum of individual digit is:", S

END

FUNCTION SUM (N)

WHILE N > 0 .

R = N MOD 10

T = T + R

N = N/10

WEND

SUM = T

END FUNCTION:

- माथिको प्रोग्राममा लाइन नम्बर ४ मा प्रयोग गरिएको भेरिएवल S को काम उल्लेख गर्नुहोस्। (State the purpose of using variable S in line 4 in above program.)

- माथिको प्रोग्राममा प्रयोग गरिएको MOD को काम उल्लेख गर्नुहोस्। (Write the use of MOD in above program.)

- Sub...End Sub को प्रयोग गरेर कुनै एउटा वृत्तको क्षेत्रफल निकाल्ने प्रोग्राम लेखुहोस्। (Write a program to calculate area of a circle using Sub ... End Sub.)

- FUNCTION... END FUNCTION को प्रयोग गरेर कुनै एउटा वाक्यमा भएका शब्दहरूको गणना गर्ने प्रोग्राम END FUNCTION to count the number of words in a sentence.)

- कुनै ५ जना विद्यार्थीहरूको रोल नं., नाम, कक्षा र प्रोग्राम लेखुहोस्। (Write a program to store Roll no., Name, Class and Address of any five students.)

Exam 2073 (Supplementary)

समय: १:३० घण्टा

पूर्णाङ्क: ५०

समूह 'क' (Group 'A')**Computer Fundamental (22 Marks)**

1. तलका प्रश्नहरूको उत्तर दिनुहोस् (Answer the following questions): [5×2=10]

- क. मल्टिमीडिया भनेको के हो ? यसको प्रयोग हुने कुनै दुईओटा क्षेत्रहरू लेख्नुहोस्। (What is multimedia? Name any two fields where multimedia is used.)
 ख. एन्टिवाइरस भनेको के हो ? कुनै दुई एन्टिवाइरस सफ्टवेयरहरूको नाम लेख्नुहोस्। (What is antivirus? Name any two antivirus software.)
 ग. परम्परागत (हुलाको) दाजोमा ईमेलको कुनै दुईओटा फाइदाहरू लेख्नुहोस्। (Give two advantages of e-mail over traditional mail.)
 घ. कम्प्युटर सञ्जालमा मोडेमको महत्त्वको वारेमा लेख्नुहोस्। (Give the importance of MODEM to the computer network.)
 ङ. कम्प्युटर हार्डवेयरको रक्षा गर्ने कुनै दुईओटा उपायहरू लेख्नुहोस्। (Write any two ways of protecting computer hardware.)

2. क. निर्देशनबन्दुसार बदल्नुहोस् (Convert as instructed): [2×1=2]

- i. $(364)_8$ into decimal
 ii. $(1101010)_2$ into octal.

- ख. Binary हिसाब गर्नुहोस्

(Perform the binary calculation): [2×1=2]

- i. 1011×101 ii. $100101 + 101$

3. जोडा मिलाउनुहोस् (Match the following): [4×0.5=2]

Group 'A'

- a. Network services
 b. Infrared
 c. Internet services
 d. Volt Guard

Group 'B'

- i. Power protection devices
 ii. E-Banking
 iii. Transmission media
 iv. File sharing
 v. Media

4. ठीक उत्तर छान्नुहोस् (Choose the correct answer): [4×0.5=2]

क. कुनचाहिं प्रोटोकल हाइन ? (Which is not a protocol?)

- i. FTP ii. POP
 iii. HTTP iv. TIP

ख. www ऐउटा हो। (www is a)

- i. Web browser ii. Protocol
 iii. Internet service iv. None of the above

ग. NIC ऐउटा हो। (NIC is a)

- i. Software ii. Hardware
 iii. HUB iv. Network operating system

घ. नेटवर्क टोपोलोजीमा नोडहरू ऐउटा तारमा जोडिएका हुन्छन्। (In Network Topology, nodes are connected in a single wire.)

5. उपयुक्त प्राचिकिक शब्दहरू लेख्नुहोस् (Write the appropriate technical terms of the following): [4×0.5=2]

क. विद्युत नभएको वेलामा विद्युत आपूर्ति गर्ने डिभाइस। (An electronic device that supplies electric current when the electricity is cut off.)

ख. इन्टरनेटमा एचटीएमएल पन्नाहरूलाई देखाउन सक्ने सफ्टवेयर। (A software which enables to view HTML pages in the internet.)

ग. फरक कम्युनिकेशन प्रोटोकल भएका सञ्जालहरूलाई जोइन सक्ने यन्त्र। (A device that can connect networks which may use different communication protocols.)

घ. सञ्जालमा भएका कम्प्युटरहरूको वीचमा सूचनाहरू आदानप्रदान गर्ने कार्यलाई सक्षम बनाउने नियमहरूको समूह। (A set of rules that governs the communication among the computers in a network.)

6. पूर्ण रूप लेख्नुहोस् (Write the full form): [4×0.5=2]

- i. UPS ii. FTP
 iii. WWW iv. NOS

समूह 'ख' (Group 'B')**Database (10 Marks)**

7. तलका प्रश्नहरूको उत्तर लेख्नुहोस् (Answer the following questions): [3×2=6]

क. डेटाबेस भनेको के हो ? (What is a database?)

ख. डेटासर्टिङ भनेको के हो ? (What is a data sorting?)

ग. फर्म भनेको के हो ? (What is a form?)

8. ठीक वेठीक छुट्याउनुहोस् (State whether the following statements are true or false): [4×0.5=2]

क. रिपोर्ट ऐउटा डेटाबेसको फाइनल रिपोर्ट प्रिन्ट गर्ने अव्यय हो। (Report is a database object used to print final report.)

ख. Ms-Access मा प्रयोग हुने ऐउटा डेटाको प्रकार Money हो। (Money is a datatype used in Ms-Access.)

ग. टेबलका रेकडहरूलाई वढ्दो वा घट्दो क्रममा मिलाउने कार्यलाई Filtering भनिन्छ। (Arranging all the records in a table either ascending or descending order is known as filtering.)

घ. Autonumber डेटा टाइपको अधिकतम साइज 4 बाइट हो। (Maximum data size of a autonumber is 4 bytes.)

9. जोडा मिलाउनुहोस् (Match the following): [4×0.5=2]

Group 'A'

- a. Ms-Access

Group 'B'

- i. data entry and editing interface

- b. Query ii. electronic spreadsheet software

- c. Record

- iii. tool to retrieve data from one or more tables

- d. Form

- iv. database management software

- v. Collection of related fields.

10. क. Modular programming का कुनै दुईओटा फाइदाहरू लेख्नुहोस्। (Write any two advantages of Modular Programming) [1]

ख. 'C' language का दुईओटा विशेषताहरू लेख्नुहोस्। (Write any two features of C language.) [1]

ग. दिइएका statement/command का कार्यहरू लेख्नुहोस्। (Write the functions of following statement/command.)

- i. CLOSE ii. KILL [1]

11. तलको Program मा भएका गल्तीहरूलाई सच्चाएर पुऱ लेख्नुहोस्। (Rewrite the given program after correcting the bugs:) [4×0.5=2]

DECLARE SUB Series ()

CLS

EXECUTE Series

END

SUB Series

Exam 2073

समय : १:३० घण्टा

पूर्णाङ्किक : ५०

समूह 'क' (Group 'A')

Computer Fundamental (22 Marks)

1. तलका प्रश्नहरूको उत्तर दिल्नुहोस्। (Answer the following questions): [5×2=10]

क. BUS टोपोलोजीका कुनै दुईओटा फाइबरहरू लेख्नुहोस्। (Write any two advantages of BUS topology.)

ख. कम्प्युटर सुरक्षाको परिभाषा लेख्नुहोस्। (Define computer security.)

ग. कम्प्युटर भाइरसवाट कम्प्युटर प्रणालीलाई बचाउने कुनै दुई उपायहरू लेख्नुहोस्। (Write any two preventive measures to protect computer system from computer virus.)

घ. मल्टिमीडिया भनेको के हो? (What is multimedia?)

ड. File Transfer Protocol का प्रयोग/कार्य लेख्नुहोस्। (Write the use/function of File Transfer Protocol.)

2. क. निर्देशनअनुसार रूपान्तर गर्नुहोस्। (Perform the conversion as per the direction): [2×1=2]

i. $(BAD)_{16}$ into Binary

ii. $(1111001)_2$ into octal

ख. Binary हिसाब गर्नुहोस्। (Perform the binary calculation): [2×1=2]

j. $10 \times 10 + 11$ ii. $110 + 10$

3. जोडा भिलाउनुहोस्। (Match the following): [4×0.5=2]

Group 'A' Group 'B'

a. Malicious software i. UPS

b. Primary storage device ii. virus

c. Power protection device iii. copyright

d. Intellectual property law iv. RAM

v. CD-ROM

4. ठीक-बेटीक छुट्याउनुहोस्। (State whether the following statement are true false): [4×0.5=2]

क. कम्प्युटर नेटवर्कले लागत घटाउँछ। (Computer Network reduces the cost):

ख. www भनेको इन्टरनेट नियन्त्रण गर्ने संस्था हो। (www is an organization which controls internet.)

ग. माइक्रोवेम ट्रान्स्मिशन वाउण्ड मिडिया हो। (Microwave transmission is an example of bound media.)

घ. कम्प्युटरको छुन र देख्न सकिने भागहरूलाई हार्डवयर भनिन्छ। (The parts of the computer which can be seen and touched are called hardware.)

5. उपयुक्त प्राविधिक शब्दहरू लेख्नुहोस्। (Write the appropriate technical terms of the following): [4×0.5=2]

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

ख. Mail server वाट e-mail प्राप्त गर्ने प्रयोग हुने प्रोटोकल। (Protocol used to receive e-mail form the mail server.)

ग. चलिरहेको graphic का तस्वीरहरू। (The moving graphic images.)

घ. कानुन जसले cyber crimes नियन्त्रण गर्दछ। (The law that controls cyber crimes.)

6. पूर्ण रूप लेख्नुहोस्। (Write the full form): [4×0.5=2]

i. LAN ii. ROM

iii. SMTP iv. NOS

REM Program to print 4 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

12. तल दिइएको program को output लेख्नुहोस्। (Write the output of the given program): [2]

DECLARE SUB CHECK (N)

CLS

N = 1436

CALL CHECK (N)

END

SUB CHECK (N)

DO WHILE n <> 0

R = N MOD 10

S = S*10+R

N = N\10

LOOP

PRINT "NOW N BECOMES"; S

END SUB

13. तलको program को अध्ययन गरी दिइएका प्रश्नहरूको उत्तर लेख्नुहोस्। (Study the following program and answer the given questions): [2×1=2]

DECLARE FUNCTION SUM (A, B)

INPUT A

INPUT B

X = SUM (A, B)

PRINT X

END

FUNCTION SUM (A, B)

S = A + B

SUM = S

END FUNCTION.

क. माथिको function procedure मा प्रयोग भएको Local variable को नाम लेख्नुहोस्। (Write the name of local variable used in the above FUNCTION procedure.)

ख. माथिको program मा प्रयोग भएको Mathematical operator र Relation operator कुन हो लेख्नुहोस्। (Write the Mathematical operator and Relation operator used in above program.)

14. क. FUNCTION ... END FUNCTION को प्रयोग गरी प्रयोगकर्तावाट सेल्सियसमा तापक्रम लिएर फरेन्हाइटमा तापक्रम देखाउने program लेख्नुहोस्। (Write a program using FUNCTION ... END FUNCTION to get temperature in Celsius from the user and then print the temperature in Fahrenheit. [3]

(Hint: $F = 1 \times C/5 + 32$)

ख. दिइएको string वाट vowel letters मात्र छानेर प्रिन्ट गर्ने प्रोग्राम SUB procedure प्रयोग गरी लेख्नुहोस्। (Write a program to print only vowel letters from given string using SUB procedure.) [3]

ग. 'ADDRESS.DAT' भन्ने sequential file भित्र NAME, AGE, CITY र TELEPHONE, फिल्डहरू छन्। त्यस फाइलभित्र भण्डार गरिएका सम्पूर्ण सूचनाहरू देखाउने program लेख्नुहोस्। (A sequential data file called 'ADDRESS.DAT' contains NAME, AGE, CITY and TELEPHONE fields. Write a program to display all the contents of that data file.) [3]

समूह 'ख' (Group 'B')
Database (10 Marks)

7. तलका प्रश्नहरूको उत्तर लेख्नुहोस्। (Answer the following questions): [3×2=6]
- डेटा र डेटाबेसको परिभाषा लेख्नुहोस्। (Define Data and Database.)
 - प्राइमरी key "भनेको के हो?" यसको महत्त्व लेख्नुहोस्। (What is primary key? Write its importance.)
 - Ms-Access मा प्रयोग हुने कुनै चारओटा डेटाका प्रकारहरूको नाम लेख्नुहोस्। (Name any four data types used in Ms-Access.)
8. ठीक उत्तर छान्नुहोस्। (Select the correct answer): [4×0.5=2]
- डेटाबेस टेबलको column हरूलाई भनिन्छ। (The columns in a database table are called
 - Record
 - Field
 - Report
 - Memo - भिडियो भण्डार गर्नका लागि उपयुक्त डेटाको प्रकार कुन हो ? (Which is the suitable data type to store video?)
 - Text
 - Memo
 - Yes/No
 - OLE object - फर्मेटेड डेटा प्रिन्ट गर्नलाई Ms-Access को अव्जेक्ट प्रयोग गरिन्छ। (..... object of Ms-Access is used to print formatted data.)
 - Query
 - Form
 - Report
 - Table - कुनचाहे Query को प्रकार होइन ? (Which is not a type of query?)
 - Search
 - Select
 - Update
 - All of the above
9. जोडा मिलाउनुहोस्। (Match the following): [4×0.5=2]
- | | |
|-------------------------------|---------------------------------------|
| Group 'A' | Group 'B' |
| a. Query | i. Printed format |
| b. Form | ii. Stores data |
| c. Table | iii. Allows view, edit, input data |
| d. Report | iv. Extracts selected record for view |
| समूह 'ग' (Group 'C') | |
| Programming (18 Marks) | |

10. a. लुप भनेको के हो ? (What is a loop?) [1]
 b. NAME र CLOSE स्टेटमेन्टहरूको कार्य लेख्नुहोस्। (Write the functions of NAME and CLOSE statements.) [1]
 c. Variable भनेको के हो ? (What is variable?) [1]

11. तलको program मा भएको गल्तीहरूलाई सच्चाएर पुनः लेख्नुहोस्। (Re-write the given program after correcting the bugs): [4×0.5=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
END
```

12. तल दिइएको program को output लेख्नुहोस्। (Write the output of the following program:) [2]

DECLARE FUNCTION AREA (L,B)

```
CLS
LET L = 50
LET B = 10
LET ans = Area (L,B)
PRINT 'The area = "; ans
END
```

FUNCTION Area (L,B)

```
ar = L * B
```

```
Area = ar
```

```
END FUNCTION.
```

13. तलको Program को अध्ययन गरी दिइएका प्रश्नहरूको उत्तर लेख्नुहोस्। (Study the following program and answer the given questions): [2×1=2]

DECLAR FUNCTION Diff (A,B)

```
CLS
```

```
INPUT "Enter first number"; A
```

```
INPUT "Enter second number"; B
```

```
PRINT "The difference"; Diff (A,B)
```

```
END
```

FUNCTION Diff (A,B)

```
difference = A - B
```

```
Diff = difference
```

```
END FUNCTION.
```

- क. माथिको प्रोग्राममा प्रयोग गरिएका numeric variable हरूको सूची तयार गर्नुहोस्। (List all the numeric variables used in the above program.)

- ख. माथिको program मा प्रयोग भएको स्थानीय (लोकल) variable हरूको सूची तयार गर्नुहोस्। (List the local variables used in the above program.)

14. a. SUB...END SUB को प्रयोग गरेर चारओटा भित्ताहरूको क्षेत्रफल पत्ता लगाउने प्रोग्राम लेख्नुहोस्। (Write a program to calculate the area of four walls using SUB...END SUB.) [Hint: Area = 2H (L+B)] [3]

- b. FUNCTION... END FUNCTION प्रयोग गरेर Main module मा दिइएको string मा कठिओटा Vowel character हरू छन्, गन्ती गर्ने प्रोग्राम लेख्नुहोस्। (Write a program to input a word in the main module and count the total number of vowel characters present in the word using FUNCTION...END FUNCTION.) [3]

- c. केही कर्मचारीहरूको नाम, ठेगाना, पद, लिङ्ग, तालबसहितको रेकर्ड भण्डारण गर्ने डेटाफाइल बनाउनुहोस्। (Create a data file to store the records of few employees having Name, Address, post, Gender and salary fields.) [3]

Exam 2072

समय : १:३० घण्टा

पूर्णाङ्क : ५०

समूह 'क' (Group 'A')

Computer Fundamental (22 Marks)

1. तलका प्रश्नहरूको उत्तर दिनुहोस्। (Answer the following questions): [5×2=10]

- क. ल्यान टोपोलोजीको परिभाषा लेख्नुहोस्। स्टार टोपोलोजीको चित्र बनाउनुहोस्। (Define LAN topology. Draw star topology.)

- ख. भाइरस आक्रमणको कुनै दुईओटा लक्षणहरू लेख्नुहोस्। (Give any two symptoms of virus attack.)

- ग. मल्टिमीडियाको कुनै एक फाइदा र कुनै एक वेफाइदा लेख्नुहोस्। (Write one advantage and one disadvantage of multimedia.)

- घ. कम्प्युटर सफ्टवेयरको सुरक्षा गर्ने कुनै दुईओटा उपायहरू लेख्नुहोस्। (Write any two ways of protecting computer software.)
- झ. इन्टरनेटका कुनै दुईओटा सेवाहरू लेख्नुहोस्। (Write any two services of internet.)
2. क. निर्देशनअनुसार बदल्नुहोस्। (Convert as instructed) [2×1=2]
- $(208)_{10}$ into Binary
 - $(104)_8$ into decimal
- ख. Binary हिसाब गर्नुहोस्। (Perform the binary calculation): [2]
- $1011 + 1101$
 - 110×11
3. जोडा मिलाउनुहोस्। (Match the following): [4×0.5=2]
- | Group 'A' | Group 'B' |
|--------------|----------------------------|
| i. Microwave | i. Power protection device |
| ii. UTP | ii. Protocol |
| iii. UPS | iii. Unguided media |
| iv. SMTP | iv. Internet |
| | v. Guided media |
4. ठीक बेठीक छुट्याउनुहोस्। (State whether the following statements are true or false.) [4×0.5=2]
- क. Walky - Talky फुल डुप्लेक्सको उदाहरण हुन्। (Walky - Talky is the example of full duplex mode.)
- ख. Co-axial cable भन्दा optical fiber cable मा डाटाको स्थानान्तरण हुने गति बढी हुन्छ। (Data transfer rate is higher in optical fiber cable than co-axial cable.)
- ग. कम्प्युटर सुरक्षा भन्नाले कम्प्युटर हार्डवेयरको मात्र वचावट भन्ने चुभिन्छ। (The computer security refers to protection of a computer hardware only.)
- घ. साउण्ड कार्ड मल्टिमीडियाको एउटा सम्बन्ध हो। (Sound card is one of the components of multimedia.)
5. उपयुक्त प्राविधिक शब्दहरू लेख्नुहोस्। (Write the appropriate technical terms of the following): [4×0.5=2]
- क. कुनै फाइलवाट भाइरस हटाउने प्रोग्राम (A program that can disinfect a file from virus.)
- ख. अरुको डाटा, सूचना, प्रोग्राम चोरी वा नष्ट गर्ने व्यक्ति (A person who steals or destroys other's data, information, files and program.)
- ग. इन्टरनेटको सुविधा प्रदान गर्ने कम्पनी (A company which provides the Internet facilities.)
- घ. कम्प्युटर सञ्जालमा अरु कम्प्युटरलाई विभिन्न सेवा प्रदान गर्ने कम्प्युटर (A computer which provides services to other computers in a network.)
6. पूर्ण रूप लेख्नुहोस्। (Write the full form of): [4×0.5=2]
- URL
 - HTTP
 - LAN
 - MODEM
- समूह 'ख' (Group 'B')
- Database (10 Marks)
7. तलका प्रश्नहरूको उत्तर दिनुहोस्। (Answer the following questions): [3×2=6]
- क. Ms-Access मा प्रयोग हुने कुनै चार डाटाका प्रकारहरू लेख्नुहोस्। (Write any four data types used in Ms-Access.)
- ख. उदाहरणसहित डाटाबेसको परिभाषा दिनुहोस्। (Define database with example.)
- ग. क्वरी भनेको के हो? (What is Query?)
8. ठीक बेठीक छुट्याउनुहोस्। (State whether the following statements are true or false.) [4×0.5=2]
- क. क्वरीले एउटा टेबलवाट मात्र फिल्ड रेकर्डहरू छान्ने काम गर्दछ। (A query is used to select fields and records from only one table.)

- ख. एम.एस. एम्बेस डिविएमएस सफ्टवेयर हो। (MS-Access is a DBMS software.)
- ग. इन्डेक्सले क्वरी र सर्ट प्रक्रियाहरूको गति घटाउँदछ। (Index decreases the speed of query and sort operations.)
- घ. प्राइमरी की विशिष्ट हुनुपर्दछ र खाली हुनुहन्न। (Data is primary key field has to be unique and not null.)
- जोडा मिलाउनुहोस्। (Match the following): [4×0.5=2]
- | Group 'A' | Group 'B' |
|-----------------|------------------|
| OLE | Data Entry |
| Validation Rule | Stores data |
| Form | Limits the value |
| Indexing | Data type |
| | Easy to search |

समूह 'ग' (Group 'C')

Programming (18 Marks)

10. क. Procedure भनेको के हो? (What is procedure?) [1]
- ख. 'C' language मा प्रयोग हुने कुनै दुईओटा Data type हरूको नाम लेख्नुहोस्। (Write any two data types used in 'C' language.) [1]
- ग. दिइएका Statement/command का कार्यहरू लेख्नुहोस्। (Write the functions of the following statement/command.) [1]
- OPEN
 - MKDIR
11. तलको program मा भएका गल्तीहरूलाई सञ्चाएर पुनः लेख्नुहोस्। (Re-write the given program after correction the bugs): [4×0.5=2]
- FUNCTION SUM (m,n)
Rem to print sum of two numbers
a=6
b=7
DISPLAY SUM(m,n)
END
FUNCTION SUM (m,n)
S=m + n
S=SUM
END SUM

12. तलको program को output लेख्नुहोस्। (Write the output of the following program): [2]

```
DECLARE FUNCTION Interest (p,t,r)
CLS
LET p=100
LET t=2
LET r=5
LET d=Interest (p, t, r)
PRINT "The simple interest = "; d
END
FUNCTION Interest (p,t,r)
d = p*t*r/100
END FUNCTION
```

13. तलको program को अध्ययन गरी दिइएका प्रश्नहरूको उत्तर लेख्नुहोस्। (Study the following program and answer the given questions):

```
DECLARE FUNCTION Prod (N)
INPUT "Any Number"; N
X = Prod (N)
PRINT x
END
FUNCTION Prod (N)
F = 1
FOR K = 1 TO N
F = F * K
NEXT K
END FUNCTION
```


४. C language मा प्रयोग गर्न सकिने कुनै दुईओटा data types हरूको नाम लेख्नुहोस्। (Name any two data types used in C language.) [1]

५. NAME र CLOSE Statement हरूको कार्य लेख्नुहोस्। (Write the function of NAME and CLOSE Statement.) [1]

६. तलका program मा भएका गल्तीहरूलाई सच्चाएर पुनः लेख्नुहोस्। (Re-write the given program after correcting the bugs.) [1]

DECLARE SUB FIBO ()

CLS

EXECUTE FIBO

END

SUB FIBO

REM program to generate 2, 3, 4, 6, 10... upto 10th terms.

A = 2

B = 2

FOR Ctr = 5 To 1

DISPLAY A; B;

A = A + B

B = A + B

NEXT ctr

END FUNCTION

७. तलका program को output लेख्नुहोस्। (Write the output of the following program.) [2]

DECLARE FUNCTION test (N)

CLS

For ctr = 1 To 3

READ N

Sum = sum + test (N)

NEXT ctr

PRINT "The result = ", sum

DATA 3, 2, 1

END

FUNCTION test (N)

Test = N^2

END FUNCTION

८. तलका program को अध्ययन गरी दिइएका प्रश्नहरूको उत्तर लेख्नुहोस्। (Study the following program and answer the given questions.) [2x1=2]

DECLARE FUNCTION JPT (N)

FOR ctr = 1 TO 6

READ N

J = JPT (N)

Sum = Sum + J

NEXT ctr

PRINT sum

DATA 10, 20 30, 40, 50, 60

END

FUNCTION JPT (N)

If N MOD 2 = 0 Then JPT = N

END FUNCTION

९. माथिको program मा प्रयोग गरिएको function को नाम के हो? (What is name to the function used in the above program?)

१०. माथिको program मा Function कति पटक प्रयोग गरिएको छ? (How many time the function will be executed in the above program?)

१४. क. Function End Function को प्रयोग गरेर एउटा सिलिण्डरको आयतन निकाल्ने program लेख्नुहोस्। (Write a program using FUNCTION ...END FUNCTION To calculate and display the volume of a cylinder.) [Hint: volume cylinder = $\pi r^2 h$] [3]

ख. SUB...END SUB को प्रयोग गरेर पहिलो दशाओटा विजोड नम्बरहरू छाप्ने program लेख्नुहोस्। (Write a program using SUB...END SUB to print the first ten odd numbers.) [3]

ग. "Marks.data" भन्ने sequential data भण्डारण गरेर राखिएको छ। त्यस data file वाट नेपाली विषयको अङ्क ५० भन्दा माथि भएको विद्यार्थीहरूको सम्पूर्ण data print गर्ने Program लेख्नुहोस्। (A sequential data file called "Marks.dat" has stored data under the field heading Roll No., Name, English, Nepali and Maths. Write a program to display all the information of those students whose marks in Nepali is more than 50.) [3]

Exam 2071

समय : १:३० घण्टा

पूऱ्णाङ्क : ५०

समूह 'क' (Group 'A')

Computer Fundamental

१. तलका प्रश्नहरूको उत्तर लेख्नुहोस्। (Answer the following questions): [5x2=10]

क. Peer-to-peer र client server network architecture बीच दुई-दुई भिन्नता दिनुहोस्। (Give two-two differences between peer-to-peer and client server network architecture.)

ख. File transfer protocol (FTP) को काम के हो? (What is the function of file transfer protocol (FTP)?)

ग. साइबर अपराध भनेको के हो? कुनै दुईओटा उदाहरण दिनुहोस्। (What is cyber crime? Give any two examples.)

घ. Computer hardware को सुरक्षाका निमित अपनाउन सकिने कुनै चार तरिका उल्लेख गर्नुहोस्। (Write any four preventive measures for computer hardware security.)

ङ. Computer virus सर्ने कुनै दुईओटा माध्यमहरू लेख्नुहोस्। (Write any two medium for transmission of computer virus.)

२. क. निर्देशनअनुसार बदल्नुहोस्। (Convert as instructed) [2x1=2]

ख. Binary हिसाब गर्नुहोस्। (Perform the binary calculation): [2]

i. 111×11 ii. Divide 1101 by 11 [2]

३. जोडा भिलाउनुहोस्। (Match the following): [4x0.5=2]

Group A **Group B**

a. E-commerce	i. Power protection device
b. Volt guard	ii. Online shopping
c. Satellite link	iii. WAN
d. Sound card	iv. Optical fiber
	v. Multimedia

४. ठीक उत्तर छाँगी लेख्नुहोस्। (Choose the correct answer.) [4x0.5=2]

क. कुनचाहि remote login सेवा हो? (Which of the following is remote login service?)

i. Video conference ii. FTP
iii. Telnet iv. TCP/IP

ख. छरिएर रहेका file का भागहरूलाई एकीकृत गर्ने प्रक्रिया हो। (Process of arranging the scattered parts of file into a contiguous manner is

i. Debugging ii. Back-up
iii. Defragmentation iv. Scandisk

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- ग. कौनचाहि Audio input यन्त्र हो। (Which of the following is an audio input device?)
- Printer
 - Microphone
 - Head phone
 - Speaker
- घ. Virus एक प्रकारको हो। (Virus is a type of.....)
- System program
 - Package program
 - Destructive program
 - Web program
5. उपयुक्त प्राविधिक शब्द लेख्नुहोस्। (Give an appropriate technical terms for the following): [4x0.5=2]
- क. सञ्चारमाध्यमको data प्रसारण गर्ने क्षमता (The data carrying capacity of communication channel.)
- ख. साइबर अपराधलाई नियन्त्रण गर्ने नैतिक सिद्धान्तहरू (The moral principles that control cyber crime.)
- ग. Online मा गरिने सामानहरूको खरिद विक्री र सेवा (Buying and selling product and services online.)
- घ. Text, audio, graphics र media को समिश्रण (An integration of text, audio, graphics and video.)
6. पूर्ण रूप लेख्नुहोस्। (Write the full form of) [4x0.5=2]
- LAN
 - VQIP
 - Gbps
 - DVD
- समूह 'ख' (Group 'B')
- Database (10 Marks)**
7. तलका प्रश्नहरूको उत्तर दिनुहोस्। (Answer the following questions):
- क. Computerized database को कुनै दुई फाइदाहरू लेख्नुहोस्। (Write any two advantages of computerized database.) [2]
- ख. MS-Access database को कुनै चार Object हरूको नाम लेख्नुहोस्। (Name any four objects of MS-Access database.) [2]
- ग. Data sorting भनेको के हो? (What is data sorting) [2]
8. ठिक वेठिक छुट्पाउनुहोस्। (State whether the following statements are true or false): [4x0.5=2]
- क. MS-Access database मा चित्रहरूलाई पनि भण्डारण गर्न मिल्दछ। (Graphics can also be stored in MS-Access database.)
- ख. Memo field को अधिकतम २५६ Character हो। (Maximum field size of memo field is 256 characters.)
- ग. Data प्रविष्ट गर्न प्रयोग हुने Access को एउटा Object लाई form भनिन्छ। (A form is a object of MS-Access used for entering data.)
- घ. Action Query ले table मा परिवर्तन गर्दछ। (An action query makes changes in table.)
9. जोडा भिलाउनुहोस्। (Match the following): [4x0.5=2]
- | Group 'A' | Group 'B' |
|------------------------|---------------------|
| a. Indexing data | i. Final output |
| b. Report | ii. View data |
| c. Yes/No | iii. Searching fast |
| d. Select query | iv. Picture |
| समूह 'ग' (Gross 'C') | |
| Programming (18 Marks) | |
10. क. QBasic मा प्रयोग हुने procedure का प्रकारहरू उल्लेख गर्नुहोस्। (Mention the types of procedures used in QBasic.) [1]
- ख. C language का दुई विशेषताहरू लेख्नुहोस्। (Write two characteristics of C language.) [1]
- ग. तलका statement को कार्य लेख्नुहोस्। (Write the function of the following statements): [1]
- SHARED
 - CALL

11. तलको program मा भएका गल्तीहरूलाई सच्याएर पुनः लेख्नुहोस्। Re-write the given program after correcting the bugs: [2]

DECLARE SUB CUBE (N)

CLS

FOR I = 1 to 5

READ

CALL CUBE (No).

NEXT X

DATA 3,5,2,6,4

END

SUB CUBE ()

DISPLAY N^3

END SUB

12. तलको program को Output लेख्नुहोस्। (Write the output of the following program): [2]

DECLARE FUNCTION AVGE (A,B,C)

X = 10

Y = 5

Z = 15

AV = AVGE (X,Y,Z)

PRINT "Average of three number"; AV

END

FUNCTION AVGE (A,B,C)

S=A+B+C

AVGE = S/3

END FUNCTION

13. तलको Program को अध्ययन गरी सोधिएको प्रश्नहरूको उत्तर लेख्नुहोस्। (Study the following program and answer the given questions): [2]

DECLARE SUB Stde (N\$)

FOR Loop = 1 to 5

READ NM\$ (Loop)

NEXT Loop

DATA RAMA, PRATIMA, PRASANT

DATA NISHA, RUDHRA

CALL Stde (NM\$)

END

SUB Stde (N\$)

Print "Name starting from P"

FOR J = 1 to 5

C\$ = MIDS (N\$, (J), 1,1)

IF C\$ = "P" THEN

PRINT NM\$(J)

END IF

NEXT J

END SUB

क. माथिको program मा प्रयोग गरिएको library function हरू उल्लेख गर्नुहोस्। (List the library function used in the above program.)

ख. माथिको program मा प्रयोग गरिएको conditional statement उल्लेख गर्नुहोस्। (List the conditional statement used in the above program.)

14. क. FunctionEnd Function को प्रयोग गरी input string मा प्रयोग भएका जम्मा व्यञ्जन वर्ण निकाले प्रोग्राम लेख्नुहोस्। (Write a program using FUNCTIONEND FUNCTION to input a string and count the total number of consonants.) [3]

ख. SUBEND SUB को प्रयोग गरेर वृत्तको क्षेत्रफल निकाल्ने program लेख्नुहोस्। (Write a program using SUBEND SUB to find the area of circle.) [Hint: Area = πr^2] [3]

- ग. Data file "Salary.Dat" मा कामदारहरूको नाम, श्रेणी र तलव तलव १५००० भन्दा माथि र ४०००० भन्दा कम छ, उनीहरूको सबै विवरण देखाउने program लेख्नुहोस्। (A data file, "Salary.Dat" contains the information of employee regarding their Name, Post and Salary. Write a program to display all the information of employee whose salary is greater than 15,000 and less than 40,000.) [3]

Exam 2070 (Supplementary)

समय : १:३० घण्टा

पूर्णाङ्क : ५०

समूह 'क' (Group 'A')

Computer Fundamental (22 Marks)

१. तलका प्रश्नहरूको उत्तर दिनुहोस्। (Answer the following questions) [5×2=10]
- Computer network भनेको के हो ? Computer network गर्नाका कुनै दुई कारणहरू उल्लेख गर्नुहोस्। (What is computer network? Write any two reasons for computer network.)
 - Communication channel भनेको के हो ? (What is communication channel?)
 - Multimedia भनेको के हो ? Multimedia प्रयोग हुने कुनै दुई क्षेत्रहरू उल्लेख गर्नुहोस्। (What is multimedia? Write any two areas where multimedia is used.)
 - Computer virus का कुनै चारओटा लक्षणहरू लेख्नुहोस्। (Write any four symptoms of computer virus.)
 - Computer सुरक्षा भनेको के हो ? Hardware सुरक्षाका कुनै दुई उपायहरू लेख्नुहोस्। (What is computer security? Write any two protective measures of computer hardware.)
२. क. निर्देशनबन्नसार बदल्नुहोस्। (Convert as instructed): [2×1=2]
- (209)₁₀ into Binary
 - (537)₈ into Binary
- ख. Binary हिसाब गर्नुहोस्। (Perform the binary calculation): [2×1=2]
- 101×111
 - $110111 - 1011$

३. जोडा मिलाउनुहोस्। (Match the following): [4×0.5=2]

Group 'A'

- TCP/IP
- Backup
- Sound card
- URL

Group 'B'

- Multimedia
- Web address
- Software security
- Protocol
- RJ45

४. ठीक उत्तर छानी लेख्नुहोस्। (Choose and copy the best answer): [4×0.5=2]

- Internet मा file हरू एउटा computer वाट अर्को computer मा सार्न प्रयोग गरिन्छ ? (Used to transfer file from one computer to another computer is internet.)
 - FAQ
 - IRC
 - FTP
 - TPF
- Data हरू प्रकाशको माध्यमबाट सञ्चार गर्ने प्रयोग गर्ने माध्यम (Media used to transfer data in forms of light?)
 - Microwave
 - Fiber optical
 - Radiowave
 - Satellite
- Virus कुन माध्यमबाट सर्द ? (What is the route of virus transmission?)
 - Monitor
 - Flash drive
 - Mouse
 - Cable

- घ. सचना प्रविधिसम्बन्धी कानून नेपालमा कहिले सुरु भएको हो ? (When was cyber law introduced in Nepal?)

- 2016 BS
- 2061 BS
- 2040 BS
- 2015 BS

५. उपयुक्त प्राविधिक शब्द लेख्नुहोस्। (Give a appropriate technical terms for the following): [4×0.5=2]

- क. विभिन्न मानिसहरूबीच विचार तथा सूचनाहरू आदानप्रदान गर्ने Network. (Network sharing and exchanging information between different people.)

- ख. गोप्य अक्षरहरूको समूह जसले अनधीकृत व्यक्तिबाट file खोल बचाउँछ। (Secret groups of character which helps to protect file from unauthorized person.)

- ग. सन्देशहरू प्रसार गर्नका लागि प्रयोग गरिने नियमको समूह र विधि (A set of rules and procedures that govern transmission of messages)

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

६. पूरा रूप लेख्नुहोस्। (Write the full form of): [4×0.5=2]

- SMTP
- IRC
- UTP
- HTTP

समूह 'ख' (Group 'B')

Database (10 Marks)

७. तलका प्रश्नहरूको छोटो उत्तर दिनुहोस्। (Write short answer of the following questions):

- क. Database भनेको के हो ? (What is database?) [2]

- ख. MS-Access मा प्रयोग हुने कुनै चारओटा data का प्रकारहरू उल्लेख गर्नुहोस्। (List out any four datatypes used in MS-Access.) [2]

- ग. Form का दुइओटा फाइलहरू लेख्नुहोस्। (Write any two advantages of Form.) [2]

८. ठीक बेठीक छुट्टाउनुहोस्। (Write whether the following statements are true or false) [4×0.5=2]

- क. Auto number data type used to store data supplied by us.

- ख. Index गर्दा sort प्रक्रियालाई छिटो बनाउँछ। (Index makes sort process fast.)

- ग. Update Query ले Table का data हरू परिवर्तन गर्दैन। (Update Query does not change the data of table)

- घ. Formatted document लाई report पनि भनिन्छ। (Formatted document is also called report.)

९. जोडा मिलाउनुहोस्। (Match the following): [4×0.5=2]

Group 'A'

- dBASE
- Primary key
- Photo
- Long text

Group 'B'

- OLE
- Memo
- DBMS
- Uniquely defined
- Hyper links

समूह 'ग' (Group 'C')

Programming (18 Marks)

१०. क. Looping भनेको के हो ? (What is Looping?) [1]

- ख. C language मा प्रयोग हुने कुनै दुइओटा data type उल्लेख गर्नुहोस्। (Write any two data types used in C language)

- ग. तलका statement/command का कार्य लेख्नुहोस्। (Write the function of following statements/command) [1]

- i. CLOSE ii. KILL [1]

११. तलका Program सञ्चार पुनः लेख्नुहोस्। (Debug the given program): [2]

- OPEN "STUDENT.DAT" FOR APPEND AS 1#

- INPUT "Name"; NS

```
INPUT "Address"; Add$
```

```
INPUT "Age"; Age$
```

```
WRITE #1, N$, Add$, Age
```

```
END #1
```

```
STOP
```

12. तलको program को Output लेख्नुहोस् : (Write the output of the following program): [2]

```
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
```

13. तलको program अध्ययन गरी सोधेको प्रश्नहरूको उत्तर लेख्नुहोस्। (Study the following program and answer the questions): [2×1=2]

```
DECLARE FUNCTION rev$(N$)
```

```
INPUT "Any string"; N$
```

```
PRINT rev$(N$)
```

```
END
```

```
FUNCTION rev$(N$)
```

```
FOR X = LEN(N$) to 1 STEP -1
```

```
A$ = MIDS(N$, X, 1)
```

```
B$ = B$ + A$
```

```
NEXT X
```

```
rev$ = B$
```

```
END FUNCTION
```

- क. माथिको program मा प्रयोग भएको Library function हरू लेख्नुहोस्। (List the library function used in the above program.)

- ख. N\$ वरावर "Computer" भएमा X को maximum मान कति हुन्छ? (What will be the maximum value of X if the N\$ is equal to "Computer".)

14. क. FUNCTION Procedure प्रयोग गरी तीनओटा सद्ब्याहरूको औसत निकाल्ने program लेख्नुहोस्। (Write a program to calculate average of three numbers using FUNCTION Procedure.) [3]

- ख. SUB Procedure प्रयोग गरी दिइएको सद्ब्याको अङ्कहरू जोडी print गर्ने program लेख्नुहोस्। (Write a program to print the sum of the digits of a given number using SUB Procedure.) [3]

- ग. एउटा sequential data file "Record.dat" मा नाम, ठेगाना, उमेर र तलवासान भण्डारण, गरिएको छ। उक्त file वाट उमेर २५ भन्दा बढी भएको Record हरू मात्र print गर्ने program लेख्नुहोस्। (A sequential data file "Record.dat" has records with field Name, Address, Age and salary. Write a program to display only those records whose Age is greater than 26.) [3]

Exam 2070

पूर्णाङ्क : ५०

समय : १:३० घण्टा

समूह 'क' (Group 'A')

Computer Fundamental (22 Marks)

1. तलका प्रश्नहरूको उत्तर दिच्छुहोस्: (Answer the following questions:) [5×2=10]

क. Network topology भनेको के हो ? Star topology को कैने एक फाइबर लेख्नुहोस्। (What is network topology? Write any one advantage of star topology.)

ख. परम्परागत हुलाको दाँजोमा E-mail को कुनै दुईथरेया फाइबरहरू लेख्नुहोस्। (Give any two advantages of e-mail over traditional mail.)

ग. नेपालमा cyber कानुन लागू गर्नुका मुख्य दुई उद्देश्यहरू लेख्नुहोस्। (List any two main aims of formulating cyber law in Nepal.)

घ. Virus आक्रमणको कुनै दुईओटा लक्षणहरू लेख्नुहोस्। (Give any two symptoms of virus attack.)

इ. Computer प्रणालीमा UPS को महत्त्व वारेमा लेख्नुहोस्। (Give the importance of UPS to the computer system.)

2. क. निर्देशन दिएअनुसार बदल्नुहोस्: (Convert as instructed:) [2×1=2]

i. $(BED)_{16}$ in to Binary

ii. $(1010111)_2$ into Octal

ख. Binary हिसाब गर्नुहोस्: (Perform the binary calculation): [2×1=2]

i. 1010×10 ii. $10101 \div 11$

3. जोडा मिलाउनुहोस्: (Match the following): [4×0.5=2]

Group 'A'

Group 'B'

a. Combination of several media

i. Guided media

b. POP

ii. Power protection device

c. UTP

iii. Multi media

d. UPS

iv. Protocol used in e-mail

v. CD-ROM

4. ठीक उत्तर ढानी लेख्नुहोस्: (Choose the correct answer) [4×0.5=2]

क. कुनचाहि audio output यन्त्र हो ? (Which of the following is an audio output device?)

i. Microphone ii. Speaker

iii. Monitor iv. Printer

ख. कुनचाहि virus को प्रकार होइन ? (Which one is not a type of virus?)

i. Message carrying virus

ii. Boot sector virus

iii. System infector

iv. Special purpose application infector

ग. कुनचाहि bounded media हो ? (Which one is bounded media?)

i. Fibre optics ii. Microwave

iii. Infra red iv. Laser

घ. कुनचाहि operating system software हो ? (Which one is an operating system software?)

i. MS-Word ii. MS-Excel

iii. Firefox iv. MS-DOS

5. उपयुक्त प्राविधिक शब्द लेख्नुहोस्: (Give an appropriate technical terms for the following): [4×0.5=2]

क. कुनै फाइलवाट virus हटाउन सक्ने program (A program that can disinfect a file from virus.)

Computer Science (Optional Second)

```

CALL.REVS(WS)
END
SUB REV (WS)
FOR I = LEN(WS) TO 1 STEP -1
CS = LEFTS(WS,I,1)
DS=DS+CS
LOOP.
PRINT "Reversed string is"; DS
CLOSE SUB

```

तल दिइएको program को output लेख्नुहोस्। (Write the output of the following program.) [2]

DECLARE SUB Seri ()

CLS

CALL Seri

END

SUB Seri

A=1

B=1

FOR I = 1 TO 2

PRINT A; B;

A=A+B

B=A+B

NEXT I

END SUB

3. तल दिइएको program अध्ययन गरी सोधिएका प्रश्नहरूको उत्तर लेख्नुहोस्। (Study the following program and answer the questions:) [2x1=2]

DECLARE FUNCTION CHKS(N)

CLS

N=57

PRINT "The number is"; CHKS(N)

END

FUNCTION CHKS(N)

FOR I = 1 TO N

IF N MOD I = 0 THEN C = C + 1

NEXT I

IF C > 2 THEN

CHKS = "Composite"

ELSE

CHKS = "Prime"

END IF

END FUNCTION

क. माधिको program वाट 'DECLARE FUNCTION' लाई हटाइएमा program चल्छ कि चल्दैन? (Will the above program execute if "DECLARE FUNCTION" is deleted?)

ख. FUNCTION नाममा किन \$ sign राखिएको छ? (Why \$ sign is used in the name of the above function?)

14. क. FUNCTION END FUNCTION को प्रयोग गरी साधारण व्याज निकाल्ने एउटा program लेख्नुहोस्। (Write a program to calculate and print the simple Interest using FUNCTION ... END FUNCTION.)

[Hint: Interest = $\frac{PTR}{100}$] [3]

ख. SUB END SUB को प्रयोग गरी 1 देखि 5 सम्मका प्राकृतिक संख्या प्रिन्ट गर्ने program लेख्नुहोस्। (Write a program to print natural numbers from 1 to 5 using SUB END SUB.) [3]

ग. Sequential data file "Staff.dat" मा केही record हरू नाम, ठेगाना, तह र तलव भण्डार गरिएको छ। उक्त डाटा फाइलको सबै records print गर्ने, एउटा program लेख्नुहोस्। (A sequential data file "Staff.dat" contains the name, address, post and salary of employees. Write a program to read and display all the records stored in the above data file.) [3]

Exam 2069

समय : १:३० घण्टा

पूर्णाङ्क : ५०

समूह 'क' (Group 'A')

Computer Fundamentals (22 Marks)

1. तलका प्रश्नहरूको उत्तर दिनुहोस् (Answer the following questions:) [5x2=10]

क. Computer network को कुनै चारओटा फाइदाहरू लेख्नुहोस्। (Write any four advantages of computer network.)

ख. Internet भनेको के हो? कुनै दुईओटा E-commerce site हरूको नाम लेख्नुहोस्। (What is internet? Write the name of any two E-commerce sites.)

ग. Computer ethic भनेको के हो? (What is computer ethic?)

घ. Hardware सुरक्षा भनेको के हो? दुईओटा software सुरक्षाको उपायहरू लेख्नुहोस्। (What is hardware security? Write any two software security measures.)

ड. Computer virus भनेको के हो? (What is computer virus?)

2. क. निर्देशन दिएबनुसार बदल्नुहोस् (Convert as instructed): [2x1=2]

i. $(684)_{10}$ into Octal

ii. $(101011)_2$ into Decimal

ख. Binary हिसाब गर्नुहोस् (Perform binary calculation): [4x0.5=2]

i. 101×11 ii. Divide 100101 by 110

3. जोडा मिलाउनुहोस् (Match the following): [4x0.5=2]

Group 'A'

Group 'B'

i. RJ-45

a. Multimedia

ii. WAN

b. Duplicate copy

iii. Back up

c. Fiber optic cable

iv. Microphone

d. Twisted pair cable

e. Internet

4. ठीक उत्तर छानी लेख्नुहोस् (Choose and copy the best answer): [4x0.5=2]

क. कुनचाहि Unguided माध्यम होइन? (Which is not a unguided media?)

i. Fiber optic ii. Microwave

iii. Infrared iv. Radiowave

ख. कुनचाहि internet को service हो? (Which is the internet service?)

i. IRC ii. Telnet

iii. E-mail iv. All of the above

ग. कुनचाहि multimedia संग सम्बन्धित छैन? (Which is not related to multimedia?)

i. Printer ii. Sound Card

iii. Microphone iv. CD-ROM

घ. कूनै virus लेबुट boot sector file हरूलाई असर गर्दछ? (Which virus infects boot sector files?)

i. Macro virus ii. Multipartite virus

iii. Boot sector virus iv. Program virus

688 Asmita's Question Bank- SEE

5. उपयुक्त प्राविधिक शब्द लेखन्होस्। (Give appropriate technical terms for the following:) [4×0.5=2]
- Internet को माध्यमवाट गरिने व्यापार (Business through internet.)
 - software जसले computer लाई virus बाट बचाउँछ (The software that protects computer from virus)
 - LAN को भौतिक बनावट (Physical layout of LAN)
 - एउटा गोप्य शब्द, जसले computer प्रयोगकर्तालाई computer तथा program चलाउन अधिकार दिन्छ (A secret word that gives user access to a particular program or computer system)
6. पूर्ण रूप लेखन्होस् (Write full forms of): [4×0.5=2]
- VOIP
 - MAN
 - UTP
 - WWW
- समूह 'ख' (Group 'B')
- Database (10 Marks)**
7. तलका प्रश्नहरूको उत्तर लेखन्होस्: (Answer the following questions:) [3×2=6]
- Database भनेको के हो? दुईओटा उदाहरण दिन्होस्। (What is database? Give two examples.)
 - Primary key को कुनै दुईओटा कामहरू लेखन्होस्। (Write any two uses of primary key.)
 - Query भनेको के हो? (What is query?)
8. ठीक उत्तर छानी लेखन्होस्: (Choose the correct answer:) [4×0.5=2]
- तलका मध्ये कुनचाहि database application होइन? (Which of the following is not a database application?)
 i. Oracle ii. Foxpro
 iii. Ms-Access iv. MS-Excel
 - Currency data ले अधिकतम्..... memory space लिन्छ। (Memory space consumed by a currency data type maximally is)
 i. 2 Bytes ii. 4 Bytes
 iii. 8 Bytes iv. 1 GB
 - MS-Access को Default data type हो। (The default data type of MS-Access is)
 i. Number ii. Text
 iii. Memo iv. Auto number
 - Row लाई..... पर्न भनिन्छ। (Row is also called)
 i. Record ii. Field
 iii. Database iv. Table
9. जोडा मिलाउन्होस् (Match the following): [4×0.5=2]
- | Group A | Group B |
|---------------|--------------------------|
| i. OLE | a. Data entry |
| ii. Hyperlink | b. Formatted Hardcopy |
| iii. Report | c. 1 GB |
| iv. Form | d. Up to 255 characters |
| | e. Up to 2048 characters |
- समूह 'ग' (Group 'C')
- Programming (18 Marks)**
10. क. डाटा फाइलको mode भन्नाले के बुझिन्छ? (What is meant by mode of data file?) [1]
- ख. 'C' language का दुईओटा विशेषताहरू लेखन्होस्। (Write any two characteristics of 'C' language.) [1]
- ग. तलका Statement हरूको कार्य लेखन्होस्: (Write the function of the following statements:) [1]
- NAME
 - KILL

11. तल दिइएको program को output लेखन्होस्। (Write the output of the following program:) [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
```
12. तल दिइएको Program का गल्तीहरूलाई सचाई पुँ लेखन्होस्: (Re-write the given program after correcting the bugs:) [2]
- ```
REM display Records of students From Data File
OPEN "STDRC.DAT" FOR INP AS # 1
PRINT "ROLL", "NAME", "ADDRESS", "CLASS",
"SECTION"
DO WHILE NOT EOF.
INPUT # 1, RN, NS, ADS$, CL, SS$
PRINT RN, NS, ADS$, CL, SS$
NEXT
CLONE # 1
END.
```
13. तलको Program अध्ययन गरी सोधिएका प्रश्नहरूको उत्तर लेखन्होस्: (Study the following program and answer the given questions:) [2×1=2]
- ```
DECLARE SUB EXAM (NS)
CLS
INPUT "Enter word", WOS$
CALL EXAM (WOS$)
END
SUB EXAM (NS)
FOR I = 1 TO LEN (NS)
PRINT RIGHTS$ (NS, I)
NEXT I
END SUB.
```
- माथिको program मा प्रयोग भएका दुईओटा built in function को नाम लेखन्होस्। (Write the names of two built in functions used in the above program.)
  - Program का real parameter सूचीकृत गर्न्होस्। (List the real parameter in the program.)
14. क. Function ... End Function को प्रयोग गरी input string मा प्रयोग भएका स्वर वर्णमात्र छुट्याउन प्रयोग हुन program लेखन्होस्। (Write a program to find the number of vowels in a input string using 'Function ... End Function'.) [3]
- ख. Sub .... Procedure module को प्रयोग गरी १, १, २, ३, ५, ८ को तालिका दर्शास्थम निकाल्ने program लेखन्होस्। (Write a program using sub .... procedure module to print the series 1, 1, 2, 3, 5, 8, ....upto ten terms.) [3]
- ग. Data file 'Teldir.dat' मा कामदारको नाम, ठेगाना र टेलिफोन नम्बर प्रयोगकर्ताको आवश्यकताअनुसार भण्डार गर्ने program लेखन्होस्। (Write a program to create a data file 'teldir.dat' to store Name, Address and Telephone Number of employees according to the need of the user.) [3]

## Exam 2068 (Supplementary)

पृष्ठा : १३०

पूर्णाङ्क : ५०

समूह 'क' (Group 'A')

## Computer Fundamentals (22 Marks)

तलका प्रश्नहरूको उत्तर लेख्नुहोस्। (Answer the following questions.)

क. कम्प्युटर नेटवर्कलाई परिभासित गर्नुहोस्। (Define Computer Network.) [5×2=10]

ख. ईमेल भनेको के हो ? कुनै एक सही ईमेल आइडि. को उदाहरण दिनुहोस्। (What is E-mail? Give an example of valid E-mail I.D.)

ग. शैक्षिक क्षेत्रमा मल्टिमिडियाले पुन्याउने कुनै दई फाइदाहरू वारे लेख्नुहोस्। (Write any two advantages of multimedia in educational field.)

घ. कम्प्युटर हार्डवयर सुरक्षा भनेको के हो ? (What is computer hardware security?)

ङ. कम्प्युटर भाइरस भनेको के हो ? (What is a computer virus?)

क. निर्देशनअनुसार बदल्नुहोस्। (Convert as instructed:) [2×1=2]

i.  $(168)_{10}$  into Binaryii.  $(1011)_2$  into Decimal

ख. बाइनरीय हिसाब गर्नुहोस्। (Perform binary calculation:) [2×1=2]

i.  $11 \times 11 + 11$ ii.  $110 + 10$ 

जोडा भिलाउनुहोस्। (Match the following:) [4×0.5=2]

## Group 'A'

- a. LAN
- b. MAN
- c. UPS
- d. IPX/SPX

## Group 'B'

- i. Within a city
- ii. Internet Protocol
- iii. Within a room
- iv. Power supply device
- v. Between countries

ठीक उत्तर छनोट गर्नुहोस्। (Select the correct answer:) [4×0.5=2]

क. कुनचाहिँ guided सञ्चार माध्यम होइन ? (Which of the following is not a guided data communication media?)

i. Coaxial cable ii. Fiber optic

iii. Twisted pair iv. Satellite

ख. छारिएर रहेका फाइलका भागहरूलाई एकीकृत गर्ने प्रक्रिया (Process of arranging the scattered parts of file into a contiguous manner.)

i. Backup ii. Defragmentation

iii. Debugging iv. All of the above

ग. कुनचाहिँ Remote login सेवा हो ? (Which of the following is remote login service?)

i. Video conference ii. Telnet

iii. FTP iv. All of the above

घ. कुनचाहिँ एन्टिभाइरस प्रोग्राम हो ? (Which of the following is an anti-virus program?)

i. NAV ii. Windows

iii. Photoshop iv. All of the above

उपयुक्त प्राविधिक शब्दहरू लेख्नुहोस्। (Write the appropriate technical terms:) [4×0.5=2]

क. सञ्चार माध्यमको डाटा प्रसारण गर्ने क्षमता (The data carrying capacity of communication channel.)

ख. हब वा स्विच केन्द्रित नेटवर्क टोपोलोजी। (Hub or switch based network topology)

ग. कम्प्युटर भाइरस जसले MS-Word, MS-Excel मा वनाइएका डकुमेन्टस्लाई विरागार्दछ। (A computer virus that damages the documents created in MS-Word &amp; MS-Excel.)

घ. साइबर अपराधलाई नियन्त्रण गर्ने नैतिक सिद्धान्तहरू। (The moral principles that control cyber crime.)

6. पूरा रूप लेख्नुहोस्। (Write the full forms): [4×0.5=2]

- a. bps
- b. MAN
- c. FTP
- d. URL

समूह 'ख' (Group 'B')

## Database (10 Marks)

7. तलका प्रश्नहरूको उत्तर लेख्नुहोस्। (Answer the following questions.) [3×2=6]

क. डाटाबेस भनेको के हो ? (What is Database?)

ख. तलवर र जन्ममिति भण्डार गर्न कुन डाटा टाइप प्रयोग गरिन्छ ? (What data types are used to store salary and date of birth?)

ग. क्वेरी भनेको के हो ? (What is a query?)

8. ठीक उत्तर छनुहोस्। (Select the correct answer:) [4×0.5=2]

क. The maximum size of text field in MS-Access is ...

- i. 50
- ii. 10
- iii. 6400
- iv. 255

ख. The default data type in MS-Access is ...

- i. Number
- ii. Data/Time
- iii. Memo
- iv. Text

ग. Report can be generated by using data from ...

- i. Table
- ii. Query
- iii. Forms
- iv. Both (i) & (ii)

घ. ..... query changes value in main table.

- i. Select
- ii. Update
- iii. Both i & ii
- iv. None of above

9. जोडा भिलाउनुहोस्। (Match the following:) [4×0.5=2]

## Group 'A'

## Group 'B'

- a. Indexing data
- i. Retrieves data conditionally
- b. Long text
- ii. DBMS
- c. FoxPro
- iii. Memo filed
- d. Query
- iv. Searching fast
- v. Report

समूह 'ग' (Group 'C')

## Programming (18 Marks)

10. क. प्रोसेडियरका प्रकारहरू उल्लेख गर्नुहोस्। (Mention the types of procedure.) [1]

ख. Q-BASIC र 'C' language बीचको कुनै एक फरक लेख्नुहोस्। (Write any one difference between Q-BASIC and C language.) [1]

ग. तल दिएका कमाण्डहरूको कार्य लेख्नुहोस्। (Write the function of the given commands.) [1]

- i. KILL
- ii. RMDIR

11. तल दिएको प्रोग्रामलाई सञ्चार पुनः लेख्नुहोस्। (Rewrite the given program correcting the bugs.) [2]

OPEN "Marks.dat" FOR OUTPUT AS #1

CLS

WHILE EOF(1)

INPUT#1, Name \$, Age, ADD\$

DISPLAY Name \$, Age, ADD\$

WEND

CLOSE #1

END

12. तलको प्रोग्रामको आउटपुट लेख्नुहोस्। (Write the output of the following program.) [2]

DECLARE FUNCTION area (L,B)

LET L = 10

LET B = 5

PRINT "The area="; area (L,B)

END

FUNCTION area (L,B)

A = L \* B

area = ar

END FUNCTION

13. तलको प्रोग्रामको अध्ययन गरी दिइएका प्रश्नहरूको उत्तर लेख्नुहोस्। (Analyze the program given below and answer the questions.) [2x1=2]

DECLARE SUB ABC (X,Y,Z)

FOR = 1 TO 3

READ A,B,C

CALL ABC (A,B,C)

NEXT P

DATA 5, 4, 3, 2, 1, 6, 7, 8, 4

END

SUB ABC (X, Y, Z)

T = X + Y + Z

IF T MOD 2 = 0 THEN

PRINT T

END IF

END SUB

क. माथिको प्रोग्राममा प्रयोग गरिएको कुनै दुई भेरिएवलहरू उल्लेख गर्नुहोस्। (List any two variables used in the above program.)

ख. माथिको प्रोग्राम RUN गर्दा SUB-procedure किति चाटि call हुन्छ? (How many times SUB-procedure will be called when program is executed?)

14. क. QBASIC मा FUNCTION ..... END FUNCTION प्रयोग गरी वाक्सका पूरा सतहको क्षेत्रफल निकाल्ने प्रोग्राम लेख्नुहोस्। (Write a program in QBASIC to find total surface area of a box using FUNCTION ...END FUNCTION) [Hint: Area = 2 (lh + bh + hb)] [3]

ख. कुनै तीनओटा नम्बर Main module मा input गर्नुहोस् र SUB ..... END SUB को प्रयोग गरी सबैभन्दा ठूलो नम्बर पता लगाउने प्रोग्राम लेख्नुहोस्। (Write a program to input three different numbers in the main module then find the greatest number using SUB .... END SUB.) [3]

ग. कर्मचारीको नाम, विभाग, नियुक्ति मिति र तलबमान भण्डार गरिएको "Employee.dat" सिक्वेन्सियल डाटा फाइलवाट रु. 5000 भन्दा बढी तलबमान भएका कर्मचारीहरूको मात्र रेकर्ड हेर्न एउटा प्रोग्राम लेख्नुहोस्। (Write a program to view those records from "Employee.dat" sequential data file having employee's name, department, appointment date and salary whose salary is more than Rs. 5000.) [3]

## Exam 2068

पूर्णाङ्क : ५०

समय : १:३० घण्टा

समूह 'क' (Group 'A')

Computer Fundamental (22 Marks)

1. तलका प्रश्नहरूको उत्तर दिनुहोस्। (Answer the following questions:) [5x2=10]

क. LAN टोपोलोजीलाई परिभापित गरी त्यसका कुनै दुई प्रकारहरू लेख्नुहोस्। (Define LAN topology and write any two types of LAN topology.)

ख. इन्टरनेटका कुनै चारओटा सेवाहरू लेख्नुहोस्। (Write any four services of Internet.)

ग. शैक्षिक क्षेत्रमा मल्टिमिडियाले पृच्याउने कुनै दुई फाइदाहरू लेख्नुहोस्। (Write any two advantages of multimedia in education field.)

घ. सफ्टवेयरलाई जोगाउने कुनै दुईओटा उपायहरू लेख्नुहोस्। (Write any two software security measures.)

ङ. कम्प्युटरमा भाइरस सङ्क्रमण भएको छ भनी जानकारी हुने कुनै चार लक्षणहरू लेख्नुहोस्। (Write any four symptoms that shows, computer is infected by computer virus.)

2. क. निर्देशनअनुसार बदल्नुहोस्: Convert as instructed: [2x1=2]

i.  $(108)_{10}$  into Binary ii.  $(173)_8$  into Binary

ख. बाइनरी हिसाब गर्नुहोस्: (Perform Binary calculation:) [2x1=2]

i.  $111 \times 11$  ii.  $1010 - 10 + 11$

3. जोडा मिलाउनुहोस्: (Match the following:) [4x0.5=2]

Group 'A'

Group 'B'

a. Microwave

a. Multimedia

b. Volt guard

b. Protocol

c. Sound card

c. Unguided media

d. TCP/IP

d. Power protection device

e. Guided media

4. सबैभन्दा उपयुक्त उत्तर छानी लेख्नुहोस्: (Select the correct answer:) [4x0.5=2]

क. तल दिइएका मध्ये कुनचाहिँ प्रोटोकल होइन? (Which of the following is not a protocol?)

i. POP ii. TCP/IP

iii. NOS iv. FTP

ख. कुन साधनले हार्डवेयरको सुरक्षा गर्दछ? (Which device protects hardware?)

i. UPS ii. MODEM

iii. Gateway iv. All of the above

ग. कुन सञ्चार माध्यममा डाटा प्रसारण तीव्र हुन्छ? (In which communication media data transfer is high?)

i. Twisted pair ii. Co-axial cable

iii. Fiber optics iv. Microwave

घ. मास्टर बूट रेकर्डलाई नष्ट गर्ने कम्प्युटर भाइरस कुन हो: (Which computer virus that damages the master boot record?)

i. Macro virus ii. File virus

iii. New folder virus iv. Boot sector virus

5. उपयुक्त प्राविधिक शब्द लेख्नुहोस्: (Write the appropriate technical terms:) [4x0.5=2]

क. PC र टेलिफोन जोड्न प्रयोग गरिने साधन। (The device used to connect PC with telephone line.)

ख. नेटवर्कमा सूचना आदानप्रदान गर्न सम्भव बनाउने नियम। (The rules that makes the network communication possible.)

ग. एउटा प्रोग्राम जसले कम्प्युटर प्रणालीलाई अवरोध गर्दछ। (A program that effect the normal functioning of computer.)

घ. कम्प्युटर नेटवर्कमा रहेको मुख्य कम्प्युटर। (A main computer in the computer network.)

पुरा रूप लेख्नुहोस्। (Write the full forms of) [4×0.5=2]

- a. bps
- b. MAN
- c. FTP
- d. URL

समूह 'ब' (Group 'B')

#### Database Management (10 Marks)

तलका प्रश्नहरूको उत्तर लेख्नुहोस्। (Answer the following questions:) [3×2=6]

क. डाटावेस भनेको के हो? (What is a database?)

ख. डाटा सर्टिङ भनेको के हो? (What is a data sorting?)

ग. फर्म भनेको के हो? (What is a form?)

ठीक उत्तर छान्नुहोस्। (Select the correct answer:) [4×0.5=2]

क. .... एम.एस. एक्सेसको डाटा टाइप होइन। (..... is not a data type of MS Access).

- i. Number
- ii. Text
- iii. Memo
- iv. Form

ख. प्राइमरी किले..... लाई लिईन। (Primary key does not accept .....)

- i. Text
- ii. Number
- iii. Null value
- iv. None of the above

ग. फर्माटेट डाटा प्रिन्ट गर्नलाई एम.एस. एक्सेसको ..... अव्यैक्ट प्रयोग गरिन्छ। (..... object of access is used to print formatted data.)

- i. Query
- ii. Form
- iii. Report
- iv. Table

घ. एम.एस. एक्सेसमा ..... मा डाटा भण्डारण हुन्छ। (In MS-Access data are stored in .....)

- i. Form
- ii. Query
- iii. Table
- iv. All of the above

9. जोडा मिलाउनुहोस्। (Match the following:) [4×0.5=2]

#### Group 'A'

#### Group 'B'

- |                    |                     |
|--------------------|---------------------|
| a. Indexing        | a. Limits the value |
| b. Report          | b. Data type        |
| c. Validation Rule | c. Error message    |
| d. Hyper link      | d. Final output     |
|                    | e. Search fast      |

समूह 'ग' (Group 'C')

#### Programming (18 Marks)

10. क. लूप भनेको के हो? (What is loop?) [1]

ख. 'सी' प्रोग्रामिङ ल्याइब्रेजले सपोर्ट गर्ने कुनै दुईओटा डाटाका प्रकारहरू लेख्नुहोस्। (List any two data types supported by 'C' Language.) [1]

ग. तलका स्टेटमेन्ट्सहरूको कार्य लेख्नुहोस्। (State the function of the following statements.) [1]

- i. EOF()
- ii. MKDIR

11. तलको प्रोग्रामलाई सच्चाएर पुऱ्या लेख्नुहोस्। (Re-write the given program after correcting the bugs:) [2]

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)

12. तल दिइएको प्रोग्रामको आउटपुट लेख्नुहोस्। (Write the output of the following program:) [2]

DECLARE SUB Series()

CALL Series

END

SUB Series

A = 2

B = 2

FOR ctr = 1 to 2

PRINT A; B;

A = A + B

B = A + B

NEXT ctr

END SUB

13. तल दिइएको प्रोग्रामको अध्ययन गरी प्रश्नहरूको उत्तर लेख्नुहोस्। Analyse the program given below and answer the questions: [2×1=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

क. माथिको प्रोग्राममा प्रयोग भएको कुनै दुईओटा library function हरू लेख्नुहोस्। (List any two library functions used in the above program.)

ख. माथिको प्रोग्रामको तेस्रो लाइनमा [C = Count '(R\$)] भेरियबल C को प्रयोग केका लागि भएको छ? (Write the use of variable 'C' inline 3[i.e. C = Count (R\$)] given in the above program.)

14. क. SUB ... END SUB को प्रयोग गरेर चारओटा भित्ताहरूको क्षेत्रफल पत्ता लगाउने प्रोग्राम लेख्नुहोस्। (Write a program to calculate the area of four walls using SUB ... END SUB.) [Hint: Area = 2H(L + B)] [3]

ख. FUNCTION ... END FUNCTION को प्रयोग गरी प्रयोगकर्ताले दिएको शब्दलाई उल्टोपारी प्रिन्ट गर्ने प्रोग्राम लेख्नुहोस्। (Write a program using FUNCTION ... END FUNCTION to get a word from the user and print it in reverse order.)

ग. सिक्वेन्सियल डाटाफाइल 'student.dat' मा केही रेकर्डहरू नाम, अझ्येजी, नेपाली र कम्प्युटर फिल्डहरूमा भण्डार गरिएको छ। सोही डाटा फाइलमा अरू केही रेकर्डहरू थप गर्नका लागि प्रोग्राम लेख्नुहोस्। (A sequential data file called 'student.dat' contains same records under the fields Name, English, Nepali and Computer. Write a program to add some more records in the same sequential data file.) [3]

# SET QUESTIONS

## Set 1: PABSON, Lalitpur – 2075

**Subject: opt: II Computer**  
**Time: 1.30 Hrs**

**F.M.: 50**

### Group 'A'

#### Computer Fundamental (22 Marks)

1. Answer the following questions: [5×2=10]
  - a. Differentiate between Server and Workstation.
  - b. Define uploading and downloading.
  - c. What do you mean by Salami attack?
  - d. List any four power protection devices.
  - e. What is malware?
  
2. a. Perform the binary calculations: [2×1=2]
  - i.  $(100110 + 11) \times 101$
  - ii.  $101010 - 11 \times 1010$
  
- b. Convert the following as indicated: [2×1=2]
  - i.  $(726)_8$  into hexadecimal
  - ii.  $(1010111)_2$  into decimal
  
3. Match the followings: [4×0.5=2]
 

| Group 'A'        | Group 'B'                   |
|------------------|-----------------------------|
| Barrel connector | ISP                         |
| ST connector     | Coaxial cables              |
| Nepal Telecom    | Internet service            |
| Telnet           | Fiber Optic cable           |
|                  | Shielded twisted pair cable |
  
4. Select the correct option: [4×0.5=2]
  - a. Which of the following is transmission medium?
    - i. FTP
    - ii. UTP
    - iii. SMTP
    - iv. All of them
  
  - b. Which is the web browser?
    - i. Windows explorer
    - ii. Safari
    - iii. MSN
    - iv. Launchpad
  
  - c. Which virus is designed to avoid detection by antivirus?
    - i. Polymorphic
    - ii. Worm
    - iii. Multipartite
    - iv. Trojan
  
  - d. Software which is used in multimedia technology.
    - i. BASIC
    - ii. Adobe Photoshop
    - iii. Office XP
    - iv. None of the above
  
5. Give the appropriate technical term of following definitions. [4×0.5=2]
  - a. The internet protocol that is used to communicate between web clients and Web servers.
  - b. Altering raw data just before processing and changing it back as previous data after processing.
  - c. Copy of data and software stored in a secondary storage device.
  - d. An artificial environment created by computer system that appears real.
  
6. Write full forms: [4×0.5=2]
 

|         |         |
|---------|---------|
| a. GPRS | b. OLE  |
| c. SIMM | d. MPEG |

### Group 'B'

#### Database (10 Marks)

7. Answer the following questions: [3×2=6]
  - a. Define DBMS along with 3 examples.
  - b. What is data redundancy? How can it be reduced in database?
  - c. Differentiate between sorting records and filtering records.

8. State whether the following statements are 'True' or 'False'. [4×0.5=2]
  - a. The object of MS-Access that stores data is known as Form.
  - b. There are 5 types of Queries in Microsoft Access.
  - c. Single data type is the sub types of number data types.
  - d. The extension of the database file is .MBD.

9. Match the following pairs: [4×0.5=2]

| Group 'A'     | Group 'B'     |
|---------------|---------------|
| Field         | 4 bytes       |
| Clipper       | Identifier    |
| Lookup wizard | 8 bytes       |
| Date/Time     | Tuple         |
|               | DBMS software |

### Group 'C'

#### Programming (18 Marks)

10. Answer the following questions: [3×1=3]

- a. What is formal parameter?
- b. List the basic data types of C language.
- c. Write down function of:
  - i. INPUT # 1
  - ii. SHELL command

11. Write the output of the following program. [2]

```
DECLARE FUNCTION NUM (a)
s = 0
FOR X = 1 TO 5
READ n
s = s + NUM (n)
NEXT X
PRINT s
DATA 1, 2, 3, 4, 5
END
FUNCTION NUM (a)
NUM = a^2
END FUNCTION
```

12. Rewrite the following program correcting the bugs. [2]

REM this program stores few records in a data file.

OPEN "names.txt" for INPUT AS #2

```
Do
INPUT "enter name"; n$
INPUT "enter class"; c
PRINT n$, c
INPUT "continue? (Y/N)"; ch$
WHILE ch$ = Y
END IF
END
```

13. Read the following program and answer the questions: [2]

DECLARE FUNCTION rem\$(W\$)

W\$ = "CYBER"

PRINT rem\$(W\$)

END

FUNCTION rem\$ (W\$)

K=LEN (W\$)

FOR I = K TO 1 STEP - 2

M\$ = M\$ + MID\$ (W\$, i, 1)

NEXT i

rem\$ = M\$

END FUNCTION



$$I = P \times T \times R / 100$$

```
PRINT "Simple interest=", I
END SUB
```

13. Study the following program and answer the given questions: [2]

```
DECLARE SUB SUM (N)
```

```
CLS
```

```
N = 46
```

```
CALL SUM (N)
```

```
END
```

```
SUB SUM (N)
```

```
DO WHILE N > 0
```

```
R = N MOD 10
```

```
S = S + R
```

```
N = INT (N/10)
```

```
LOOP
```

```
PRINT "SUM OF DIGITS =", S
```

```
END SUB
```

- a. List library function use by above program.
- b. Write the name of sub procedure.

14. Write the following program: [3x3=9]

- a. Write a program to input a word and display reverse of that word by using SUB. END SUB.
- b. Write a program to ask radius and display area of circle by using FUNCTION. END FUNCTION. [Hint:  $A = \pi r^2$ ]
- c. Write a program to create a data file "REC.DAT" to store the records of employees having Name, Address, Post, Gender and Salary field. The program should terminate according to the user's choice.

### Set 3: PABSON, Rupandehi – 2075

#### Group 'A'

##### Fundamental (22 Marks)

1. Answer the following questions: [5x2=10]
  - a. Differentiate between client server network and Peer-to-peer network?
  - b. What are search engine, and what are they used for?
  - c. Why is a power protection device needed in computer system? Mention any two power protection devices.
  - d. What are the steps one should take to avoid virus attacks?
  - e. Explain the role of multimedia in business and education.
2. Write the full forms of: [4x0.5=2]
  - a. EMI
  - b. ICT
  - c. CBE
  - d. ISDN
3. Write single technical term for the following: [4x0.5=2]
  - a. A virtual space created by using computer network, internet and telecommunication.
  - b. A device used in computer network that can amplify the weak signal.
  - c. The process of re-writing parts of a file to contiguous sector on a harddisk to increase the speed of access and retrieval.
  - d. A copy of a file, which is used in the event of the original file being corrupted.
4. State whether the following statements are true or false: [4x0.5=2]
  - a. TV broadcasting is an example for data transmitting in Half-duplex mode.

- b. Each computer virus contains instruction to initiate a unique, problematic event on the computer.
- c. POP is used to send an e-mail.
- d. Files having .com, .exe, .drv, .doc and .sys extensions are self-executable files.

5. a. Perform the following binary calculation: [2x1=2]

$$\text{i. } (1010010001)_2 \div (100)_2$$

$$\text{ii. } (111101 + 100110 - 111001)_2$$

- b. Convert as indicated: [2x1=2]

$$\text{i. } (39AF)_{16} \Rightarrow (?)_8$$

$$\text{ii. } (1905)_{10} \Rightarrow (?)_2$$

6. Match the following: [4x0.5=2]

i. Internet

ii. NetBEUI

iii. Web Crawler

iv. Stoned

i. Network Protocol

ii. Boot sector virus

iii. WAN

iv. Search engines

v. Script virus

#### Group 'B'

##### Database Management (10 Marks)

7. Answer the following questions: [3x2=6]

- a. Differentiate between Database and DBMS.
- b. Define tuple and foreign key.
- c. What is query? Write its types.

8. a. Write true or false: [4x0.5=2]

i. Yes/No is a logical data type.

ii. Hyperlink data type occupies up to 2042 characters.

iii. Form is a graphical interface through which data can be printed in a specified format.

iv. Primary key uniquely identified the records.

- b. Match the following: [4x0.5=2]

a. Data integrity

i. Smart tags

b. Automatic

ii. Validation rule

c. Field properties

iii. Caption

d. Label for field

iv. Indexed

v. Default value

#### Group 'C'

##### Programming (18 Marks)

9. Answer the following questions: [3x1=3]

- a. Differentiate between program file and data file.
- b. List out the different data types used in C language.
- c. Write the use of NAME AS and FILES statement.

10. Debug the following program: [2]

REM to create a data file.

CLS

OPEN "RECORD.DAT" FOR INPUT AS #1

TOP:

INPUT "NAME, AGE, ADDRESS:"; N\$, A\$, AD\$

WRITE AS #4, N\$, A\$, AD\$

INPUT "Any more:"; y\$

IF y\$ = Y THEN GOTO TOP

CLOSE FILE #1

END

11. Write the output of the following program: [2]

DECLARE FUNCTION KLM\$(A\$)

CLS

c\$ = "NATIONAL INFORMATION TECHNOLOGY

CENTER"

PRINT KLM\$(c\$)

END

FUNCTION KLM\$(A\$)

b\$ = LEFT\$(A\$, 1)

FOR X = 1 TO LEN (A\$)

```

MS=MID$(A$,X,1)
IF M$= SPACES$(1) THEN B$=B$+MID$(A$,x+1,1)
NEXT X
KLM$ = B$
END FUNCTION

```

12. Study the program given below and answer the questions that follow: [2×1=2]

```

DECLARE FUNCTION BIN (A)
CLS
INPUT "NUMBER"; N
PRINT "The result is: "; Bin (N)
FUNCTION BIN (A)
BASE = 2
WHILE A > 0
R = A MOD BASE
A = A/BASE
B$ = STR$(R) + B$
WEND
BIN = VAL (B$)
END FUNCTION

```

**Questions:**

- What will be value of R when R MOD BASE is executed for the first time if the user input is 15?
  - Write the function of STR\$ and VAL function.
13. Write programs to solve the following problems [3×3=9]

- Write a program to find and print the sum of each digits of an user entered number using SUB ... END SUB.
- Write a program to return the perimeter of rectangle using FUNCTION ... END FUNCTION
- Write a program to create a sequential data file "SCHOOL.DAT" to store as many as records according to users need. Each record should contain Name, Class, Roll No., Sex and Telephone number.

### Set 4: PABSON, Kathmandu – 2075

#### Group 'A'

##### Fundamental (22 Marks)

1. Answer the following questions: [5×2=10]

- What is network interface card? Write down the advantage of it in a network.
- What is search engine? For what it is used?
- What is the role of multimedia in an advertisement?
- Why do the computer systems need regular maintenance?
- List any two points to protect your computer from the virus?

2. a. Perform the following binary calculations: [2×1=2]

$$\text{i. } (1111 + 1101)_2 - (1001)_2 \quad \text{ii. } (1101 \times 11)_2 + (101)_2$$

- b. Convert the following as indicated: [2×1=2]

$$\text{i. } (235)_8 \text{ into decimal} \quad \text{ii. } (BA5)_{16} \text{ into binary}$$

3. Match the following pairs: [4×0.5=2]

Animation: The creation and manipulation of picture images in the computer

Graphics: A system that enables one or more users to move and react with computer graphics world

Multimedia: The moving graphic images.

VR: The combination of different media.

4. Replace the following definitions with a technical term. [2]

- A mode of transmission in which data flows in the both directions, but only one at a time.
- Message sent electronically through computer network.
- A class of program that searches your hard drive and floppy disks for any known or potential viruses.
- The technique used to provide medical information and services through the internet.

5. Write the full forms: [4×0.5=2]

- POP
- DVD
- MBR
- VHF

6. Choose the correct answer. [4×0.5=2]

- Opera and Firefox is a/an .....  
i. Chat program ii. Web Browser  
iii. Search engine iv. None of the above
- The temperature in the computer system should be maintained between ..... to .....  
i. 21° C to 24° C ii. 22° C to 25° C  
iii. 23° C to 26° C iv. None of the above
- Main component of multimedia is:  
i. Floppy disk ii. Magnetic disk  
iii. Sound card iv. All of the above
- Some of the methods of hardware protection are:  
i. Password policy ii. Security lighting  
iii. Scan disk iv. All of the above

#### Group 'B'

##### DBMS (10 Marks)

7. Answer the following questions: [3×2=6]

- What is an electronic database? List any two advantages of it.
- What is DBMS? What are the applications of DBMS?
- What is a form and what are the uses of form in MS-Access?

8. State True or False: [4×0.5=2]

- A field name can be up to 255 characters long.
- OLE is the data type of MS-Access.
- Collecting multiple related fields is called record.
- Validation rule specifies the expression that checks the invalid data.

9. Match the following pairs: [4×0.5=2]

- |              |                       |
|--------------|-----------------------|
| Query        | View data             |
| Report       | Relationship          |
| One to one   | Action query          |
| Delete query | Extract selected data |
|              | Data base software    |

#### Group 'C'

##### Programming (18 Marks)

10. Answer the following questions: [3×1=3]

- What is a procedure?
- Write down the name of different types of operators used by C language?
- Write down the function of NAME, AS and LINE INPUT# statement.

11. Write the output of the following program. [2]

```

DECLARE FUNCTION RESULT (N)
N = 4
PRINT RESULT (N)
END
FUNCTION RESULT (N)
FOR I = 1 TO N

```

```

T = I + 2
D = D + T
NEXT I
RESULT = D
END FUNCTION

```

**12. Rewrite the following program correcting the bugs. [2]**

```

REM to copy from old file to new file
OPEN "info.dat" for INPUT AS #1
OPEN "temp.dat" for OUTPUT AS #2
DO UNTIL EOF (1)
INPUT #2, n$, p$, d$, s
WRITE #1, n$, p$, d$, s
WEND
CLOSE #2, #2
END

```

**13. Read the following program and answer the questions:** [2]

```

DECLARE SUB SERIES (A, R, N)
CLS
INPUT "ENTER FIRST TERM"; X
INPUT "NUMBER OF TERM TO BE GENERATED"; Z
CALL SERIES (X,Y,Z)
END
SUB SERIES (A, R, N)
FOR I = 1 TO N
PRINT A
A = A * R
NEXT END SUB

```

**Questions:**

- What will be the output if user input 3, 2 and 4 for variables X, Y and Z variables.
- What type of parameter X, Y and Z are?
- WAP to convert Celsius temperature in Fahrenheit using FUNCTION ... END FUNCTION. [3]
- WAP to check whether input number is palindrome number or not using SUB..... END SUB. [3]
- Create a sequential data file "std.dat" to store names and marks obtained in English, Math and Science subjects for a few students. [3]

## Set 5: Gandaki Province

### Group 'A'

#### Computer Fundamentals (22 Marks)

- Answer the following questions:** [5×2=10]
  - What is band-width? Give the importance of MODEM to the computer network.
  - Define TELNET. Write the name of any two E-commerce sites.
  - Define computer security. Differentiate between UPS and Volt Guard.
  - List any two main aims of formulating cyber law in Nepal.
  - What is computer virus? How does a virus spread from one computer to another?
- a. Convert the following as instructed:** [2×1=2]
  - $(524)_{10}$  into octal.
  - $(31A)_{16}$  into binary.
- b. Perform the following binary calculations:** [2×1=2]
  - $1011 * 101$
  - $1010 - 111 + 101$

**3. Match the following:**

- |                  |                             |
|------------------|-----------------------------|
| a. 192.168.1.1   | - Video compression format  |
| b. POP           | - IP address                |
| c. Data diddling | - Download mail             |
| d. AVI           | - Manipulate data illegally |
|                  | - Anti-virus                |

**4. Select the best alternative:**

- |                                                                                              |                        |                    |
|----------------------------------------------------------------------------------------------|------------------------|--------------------|
| a. Which is not protocol?                                                                    | i. NETBIOS/NETBUI      | ii. TCP/IP         |
|                                                                                              | iii. FTP               | iv. UTP            |
| b. Which is not virus?                                                                       | i. Redlof              | ii. June-12        |
|                                                                                              | iii. Scandisk          | iv. I love you     |
| c. In which communication media data travels in the form of light?                           | i. Co-axial            | ii. FOC            |
|                                                                                              | iii. Telephone Wire    | iv. UTP cable      |
| d. It is the modification of software to remove the copy prevention, trial/demo version etc. | i. Software piracy     | ii. Phising        |
|                                                                                              | iii. Software cracking | iv. Salami Shaving |

**5. Give the technical terms of the following:** [4×0.5=2]

- Medium that carries data without physical path.
- A secret word that gives a user access to a particular program and system.
- Real time communication between two computers in network.
- The scattering of the part of the same disk file over different location.

**6. Write the full forms of the following abbreviations:** [4×0.5=2]

- |        |          |
|--------|----------|
| a. OSI | b. ADSL  |
| c. GIF | d. HLCIT |

### Group 'B'

#### Database (10 Marks)

**7. Answer the following questions:** [3×2=6]

- What is data sorting? Assign suitable data type for the following fields: Fee Amount and teacher's comment.
- Define query. Write the importance of primary key in database.
- Define report. Why is it created?

**8. Choose the correct answer:**

- |                                                                                        |              |
|----------------------------------------------------------------------------------------|--------------|
| a. The storage size of date/time data type is .....                                    | [4×0.5=2]    |
| i. 8 bytes                                                                             | ii. 4 bytes  |
| iii. 3 bytes                                                                           | iv. 32 bytes |
| b. The default value size of text field is .....                                       |              |
| i. 40                                                                                  | ii. 50       |
| iii. 256                                                                               | iv. 64       |
| c. A column in Access table is .....                                                   |              |
| i. Field                                                                               | ii. Query    |
| iii. Database                                                                          | iv. tuple    |
| d. To find items that cost between Rs. 20 and Rs. 22 in a database table you use ..... |              |
| i. A filter                                                                            | ii. A query  |
| iii. Sorting                                                                           | iv. Freezing |

**9. Match the following:**

- |                 |                                            |
|-----------------|--------------------------------------------|
| i. Ms-Access    | Analyze and present data in printed format |
| ii. Data update | Primary data storage unit                  |
| iii. Table      | Query                                      |
| iv. Report      | Primary key                                |
|                 | RDBMS                                      |

**Computer Science (Optional Second)****Group 'C'**

(Programming: 18 Marks)

10. Answer the following questions: [3×1=3]

- Differentiate SUB procedure and FUNCTION procedure used in modular programming approach.
- Write any two features of C-programming language.
- Write down the function of the following statements:

- EOF ()
- NAME ..... AS

11. Write the output of the given program: [2]

DECLARE SUB Show (a, b)

CLS

CALL show (11, 6)

END

SUB show (c, d)

x = 8

FOR i = c TO d STEP - 1

IF i MOD 3 = 0 THEN

PRINT x/2 + i\*2;

ELSE

PRINT x \* 2 + i;

END IF

NEXT i

END SUB

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

DECLARE SUB fibonic()

REM \* Fibonacci series \*

CALL SUB fibonic

END

SUB fibonic

a = 1

b = 1

FOR x = 1 TO 10

DISPLAY a;

a = a + b

b = a + b

END fibonic

13. Study the following program and answer the given questions: [2]

COMMON SHARED WS

DECLARE SUB COUNT ( )

CLS

INPUT "ENTER ANY WORD"; WS

CALL COUNT

END

SUB COUNT ( )

FOR I = 1 TO LEN (WS)

BS\$ = MID\$(WS, I, 1)

VS\$ = UCASE\$(BS\$)

IF VS\$ = "A" OR VS\$ = "E" OR VS\$ = "I" OR VS\$ = "O" OR

VS\$ = "U" THEN

C = C + 1

END IF

NEXT I

PRINT "TOTAL VOWELS ="; C

END SUB

- What is the use of COMMON SHARED statement used in above program?
- What are the library functions used in above program?

14. a. Write a program to calculate the area of four walls using SUB procedure. [Hint: A = 2\*H\*(L + B)] [3]

- Write a program using FUNCTION ...END FUNCTION to get a word from the user and print it in reverse order. [3]
- A sequential date file called "Marks.dat" has stored data under the field heading; Name, Roll No., English, Nepali and mathematics. Write a program to display all the information of those students whose marks in Nepali is more than 50. [3]

**Set 6: SOS****Group 'A'****Computer Fundamental (22 Marks)**

1. Answer the following question: [5×2=10]

- What is meant by transmission media? Name any three wireless transmission media.
- What is browser? Write two examples.
- What is Hardware security? List two software security measures.
- What is computer Antivirus? Write two examples.
- Define multimedia. Why it is important in education?

2. Number system

- Convert as instructed: [2×1=2]

$$\text{i. } (\text{DAD})_8 = (?)_{10} \quad \text{ii. } (2040)_{10} = (?)_2$$

- Perform binary calculation: [2×1=2]

(If A = 11011, B = 111 and C = 1101)

$$\text{i. } (A + B) + C \quad \text{ii. } A/B$$

3. Match the following: [4×0.5=2]

|                       |            |
|-----------------------|------------|
| A                     | B          |
| Intellectual property | protocol   |
| Self replicating      | bounded    |
| Coaxial               | copy right |
| SPX/IPX               | virus      |
|                       | Security   |

4. State whether true or false: [4×0.5=2]

- Duplex mode can transfer data in both directions.
- Google Chrome is search engine.
- Scandisk is software security measures.
- Sound card is the example of software used in Multimedia.

5. Write down the single technical term for the following: [4×0.5=2]

- Making extra copies of data or program.
- Technique used to provide medical information and services through the internet.
- A secret word that gives a user access to a particular program and system.
- A battery supported power unit, which supply power during the failure of electricity.

6. Write the full forms of: [4×0.5=2]

- PNG
- IRC
- CDMA
- NITDC

**Group 'B'****Database (10 Marks)**

7. Answer the following questions: [3×2=6]

- What is data redundancy? How can you reduce the data redundancy?
- While designing table structure which data type are suitable to store information about teachers name, address, salary and DOB?
- Define Primary key.





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- b. Convert the following as indicated: [2x1=2]
- (81)<sub>10</sub> into binary
  - (453)<sub>8</sub> into hexadecimal
3. Match the following pairs: [4x0.5=2]
- |          |                             |
|----------|-----------------------------|
| NOS      | - Any pages of the web site |
| Web page | - Virus                     |
| CAT - 5  | - Antivirus                 |
| Spyware  | - Transmission media        |
|          | - Window server             |
4. Replace the following definitions with a technical term. [4x0.5=2]
- Medium that carries data without physical path.
  - Learning through electronic media.
  - A collection of internet resources such as files, hyperlinked text, audio, video etc.
  - The electronic transfer of monies with the goal of hiding its source and possibly its destination.
5. Write the full forms: [4x0.5=2]
- CCTV
  - SQL
  - ORG
  - RGB
6. Choose the best answer: [4x0.5=2]
- Which is not the network protocol?
    - TCP/IP
    - STP
    - FTP
    - All of the above
  - An important counter measure against data corruption or loss.
    - Password policy
    - Backup system
    - Scan disk
    - Defragmentation
  - Which one is not the type of virus?
    - Message carrying
    - Boot sector
    - Special purpose
    - System infector
  - E-commerce
    - is a type of business
    - is a type of virus
    - Both i and ii
    - None of the above

**Group 'B'**

**DBMS (10 Marks)**

7. Answer the following questions: [3x2=6]
- What is relational database software? Give any two examples.
  - What is a form? What is the purpose of preparing form in MS-Access?
  - Identify a record, field, and values from the following table structure.
- | Roll | Name       | Marks |
|------|------------|-------|
| 1    | Kopila     | 87    |
| 2    | Rabin Rana | 56    |
8. Select the best alternatives for the following. [4x0.5=2]
- Which is the default data type of MS-Access?
    - Number
    - Auto number
    - Text
    - Currency
  - Field size, format, input mask, default value are .....
    - Key elements
    - Field properties
    - Navigating modes
    - Data types
  - Primary key does not accept .....
    - Text
    - Number
    - Null value
    - None of the above

d. Which is not MS-Access object?

- Form
- Query
- Caption
- Table

9. Match the following pairs: [4x0.5=2]

- |                            |                    |
|----------------------------|--------------------|
| Show final report          | - Field properties |
| Data entry                 | - Design view      |
| Change the table structure | - Form             |
| Validation rule            | - Report           |

**Group 'C'**

**Programming (18 Marks)**

10. Answer the following questions: [3]

- Write any two differences between user defined function and built in function.
- List any two data types used in C language?
- Write down function of:
  - CLOSE
  - NAME ... AS ...

11. Write the output of the following program. [2]

```
DECLARE SUB Series()
CALL Series
END
SUB Series
R = 2
M = 5
WHILE M >= 1
PRINT R
R=R*10+2
M=M-1
WEND
END SUB
```

12. Rewrite the following program correcting the bugs. [2]

```
REM to print only male record on the printer from data
file.
OPEN "EMP.DAT" FOR OUTPUT AS #1
DO
INPUT #4, N$, A%, SS
SELECT CASE S
CASE MALE
PRINT N$, A%, SS
END SELECT
LOOP UNTIL EOF (1)
STOP#1
END
```

13. Read the following program and answer the questions: [2]

```
DECLARE SUB PATTR(N)
N=7
CALL PATTR(N)
END
SUB PATTR(N)
FOR I=1 TO 5
PRINT N
IF N MOD 2=1 THEN
N = (N*2)+1
ELSE
N=N/2
END IF
NEXT I
END SUB
```

**Questions:**

- Write the output of the above program?
- Write down the function of MOD in the above program.

- a. WAP to calculate the area of four walls using FUNCTION ...END FUNCTION [3]  
 b. WAP that ask any number and calculates its factors using SUB procedure. [3]  
 c. Write a program to input product name, quantity and price of some items and store them in "STOCK.DAT" file along with serial number for each record. [3]

### Set 9

#### Group 'A'

##### Computer Fundamental (22 Marks)

- Answer the following questions:** [5×2=10]
- What is local area network? List any two advantages of star topology.
  - The Internet is the main source of computer viruses. Justify this statement with any two strong points.
  - What are the main aims of formulating cyber law in Nepal?
  - Why is the power protection device needed in a computer system?
  - List any four ways to protect computer from computer virus?

- a. Convert as instructed:** [2×1=2]
- (305)<sub>8</sub> into decimal
  - (3AB)<sub>16</sub> into binary

- b. Perform binary calculation:** [2×1=2]
- $101 \times 11 - 101$
  - $101011 + 101$

- Match the following:** [4×0.5=2]

| <u>Group A</u> | <u>Group B</u> |
|----------------|----------------|
| Microwave      | Cyber crime    |
| Coaxial cable  | Protocol       |
| Data diddling  | Unguided Media |
| TCP/IP         | Cyber space    |
|                | Guided media   |

- Selected the correct answer:** [4×0.5=2]

- Which of the following is used to connect similar networks?  
 i. HUB      ii. Switch  
 iii. Router    iv. Bridge
- In which communication media does data travel in the form of light signal?  
 i. Telephone wire    ii. Fiber optic  
 iii. Coaxial Cable    iv. Twisted pair cable
- Which is not the protocol?  
 i. TCP/IP      ii. IPX/SPX  
 iii. HTTP        iv. STP
- A multimedia computer must have the following hardware component.  
 i. Sound card    ii. Adobe Photoshop  
 iii. Floppy disk drive    iv. All of above.

- 5. Give appropriate technical terms of the following.** [4×0.5=2]

- A computer on the network that provides resources and allows a client to use it as workstation.
- A program that checks and keeps hard disk in good condition.
- The moral principles that should be followed by the computer users.
- A program that destroys the other program.

- 6. Write full forms:** [4×0.5=2]
- BCD
  - BLOG
  - VOIP
  - ADSL

#### Group 'B'

##### Database (10 Marks)

- 7. Answer the following questions in short.** [3×2=6]
- Define the terms field and record of a table with an example.
  - What is a primary key? List any two uses of form.
  - List any four uses of query.

- 8. Select the correct answer:** [4×0.5=2]
- The default text field size in Access is .....  
 i. 50      ii. 64  
 iii. 256     iv. 255
  - Which is suitable for primary key?  
 i. Registration number    ii. Phone number  
 iii. Roll number          iv. All of the above.
  - A query that makes global changes in data of a table or more linked table.  
 i. Select query      ii. Append query  
 iii. Update query    iv. Modify query
  - Which is the example of database?  
 i. Attendance Register    ii. Telephone Directory  
 iii. Mark ledger        iv. All of above

- 9. Match the following** [4×0.5=2]

| <u>Group A</u>  | <u>Group B</u>                                            |  |
|-----------------|-----------------------------------------------------------|--|
| Default value   | Specifies a pattern for data to be entered                |  |
| Input Mask      | A value is entered automatically                          |  |
| Validation Rule | Limits data that to be entered in a field                 |  |
| Format          | Specifies the layout for data that is entered in a field. |  |
|                 | Specifies whether data must be entered in a field or not. |  |

#### Group 'C'

##### Programming (18 Marks)

- 10. a. List any two advantages of procedure.** [1]  
**b. Why is C language called structured programming language?** [1]  
**c. Write down the function of the following statement/functions:** [2×0.5=1]
- SHELL statement
  - EOF() function

- 11. Write the output of the given program:** [2]

```
DECLARE FUNCTION Result(X, Y)
```

```
LET A = 3
```

```
LET B = 2
```

```
FOR P = 1 To 3
```

```
S = S + Result ((A), (B))
```

```
NEXT P
```

```
PRINT S, A, B
```

```
END
```

```
FUNCTION RESULT (X, Y)
```

```
-x = x + 2
```

```
y = y + 3
```

```
Result = X + Y
```

```
END FUNCTION
```

- 12. Re-write the given program after correcting the bugs:**

REM adds more records in the existing file 'Persons.dat' which has REM fields like name, post and salary. [2]

```
Do
```

```
OPEN "STD.DOC" FOR OUT AS # 1
```

```

INPUT "Enter name"; N
Enter "Input post"; P$
INPUT "ENTER Salary:"; Salary$
WRITE 1, NS, P$, Salary $
PRINT "Do you want to add more records (y/n)"
LOOP
CLOSE #1
END

```

13. Study the following program and answer the given questions: [2×1=2]

```

DECLARE SUB NUMBER (A)
INPUT "Enter an integer number"; N
CALL NUMBER (N)
END

```

```

SUB NUMBER (A)
WHILE A < 0
R = A MOD 2
Z$ = STR$(R) + Z$
A = INT(A/2)
WEND
PRNT VAL(Z$)
END SUB

```

- a. What will be the output of the program if a user inputs 15?
- b. List the arguments and parameters used in the program.
- 14. a. Write a program that asks a user to input radius and height of a cylinder and then it calls a sub procedure to display total surface area of the cylinder.  
[Hint: TSA of cylinder =  $2 \pi R(R + H)$ ] [3]
- b. Write a program to define a function procedure having a numeric parameter which returns total number of factors of a number and use the function in a program to display prime numbers from 12 to 35. [3]
- c. A sequential data file named "person.info" consists of records having name, address, and date of birth of some persons. Write a program that reads the records of the file and displays records of those persons who are currently 16 years old. [3]

### Set 10

#### Group 'A'

##### Computer Fundamental (22 Marks)

1. Answer the following questions: [5×2=10]
  - a. Define Network. List and explain the types of transmission media.
  - b. What is internet? Define main services of the internet.
  - c. What do you mean by hardware security? List any three strong hardware security controls.
  - d. What is multimedia? List any 3 Multimedia components.
  - e. What is virus? List and explain any one type of computer virus.
2. a. Convert the following. [2×1=2]
  - i.  $(A00)_{16}$  into  $(\ )_8$
  - ii.  $(10000)_2$  into  $(\ )_{10}$
- b. Perform the following binary operations. [2×1=2]
  - i.  $1111+10+10$
  - ii.  $1000 - 110\times 11$

#### 3. Match the following:

##### Group 'A'

- a. Protocol
- b. WAN
- c. Network component
- d. Transmission media

##### Group 'B'

- NIC
- Fiber optic
- HTTP
- Computer security
- Internet

[4×0.5=2]

#### 4. Select and write the best alternatives:

[4×0.5=2]

- a. Which of the following includes data diddling?
  - i. Multimedia
  - ii. Computer security
  - iii. Virus
  - iv. Cyber crime
- b. Which of the following is not the web browser?
  - i. Chrome
  - ii. Safari
  - iii. Opera
  - iv. Microsoft
- c. The Government of Nepal passed the cyber law in ...
  - i. 1 Jan. 2004
  - ii. 15 Sep. 2004
  - iii. Jan 2005
  - iv. 15 Sep 2005
- d. An FM broadcasting is an example of ...
  - i. Half-duplex mode
  - ii. Simplex mode
  - iii. Full duplex mode
  - iv. None of the them

#### 5. Write the technical term for the following:

[4×0.5=2]

- a. A device that amplifies the incoming signals creates a new copy of it and transmits the signals on the network.
- b. A disk tool, which helps to fix errors in the disk and removes, lost clusters, bad sectors.
- c. Online mail service through internet.
- d. The smallest amount of information, which may be stored in a computer.

#### 6. Write the full form of the following:

[4×0.5=2]

- a. ADSL
- b. BIT
- c. ASCLL
- d. OLE

##### Group 'B'

##### DBMS (10 Marks)

#### 7. Answer the following questions:

[3×2=6]

- a. What is filtering? Write a difference between filtering and sorting.
- b. Define report? What is the use of caption?
- c. Why table or query is needed to create a form?

#### 8. Select and write the correct answer:

[4×0.5=2]

- a. The maximum number of characters used to define a field name is ..... character.
  - i. 40
  - ii. 32
  - iii. 255
  - iv. 64
- b. The default size of text field in an Ms-access database table is .....
  - i. 50
  - ii. 55
  - iii. 255
  - iv. 65535
- c. ? represents .....
  - i. nothing
  - ii. parameter
  - iii. symbol
  - iv. one character
- d. The ..... selects the required records and displays the result.
  - i. short
  - ii. Filter
  - iii. query
  - iv. all

#### 9. Match the following:

[4×0.5=2]

- a. Fox pro
- b. Index
- c. OLE
- d. Text
- i. Fast search
- ii. Picture
- iii. Data base
- iv. data type
- v. 255 character

**Group 'C'**  
**Programming (18 Marks)**

- i. Answer the following questions: [3×1=3]
- Difference between call by value and call by reference.
  - Why C is structured programming language?
  - Write the function of the following:
    - LINE INPUT # .
    - NAME.., AS...

- ii. Rewrite the following program after correcting the bug:

```
DECLARE FUNCTION DIVISIBLE (A) [2]
```

```
CLS
```

```
REM CHECK WHETHER NUMBER IS DIVIDIBLE
BY 2 AND 3 OR NOT
```

```
INPUT "Enter a number"; A
```

```
CALL = DIV$ (A)
```

```
PRINT "Number is ";S
```

```
END
```

```
FUNCTION DIV$ (A)
```

```
R = N\2
```

```
RI = N MOD 3
```

```
IF RI = 0 AND RI = 1 THEN
```

```
DIV$ = "DIVISIBLE"
```

```
ELSE
```

```
DIV$ = "NOT DIVISIBLE"
```

```
END IF
```

```
END FUNCTION
```

12. Write the output of the given program: [2]

```
REM output
```

```
DECLARE SUB RESULT (B$)
```

```
B$ = "SOSHG"
```

```
CALL RESULT (B$)
```

```
PRINT "THE END"
```

```
END
```

```
SUB RESULT (B$)
```

```
FOR C = 1 TO LEN (B$) STEP 2
```

```
XS = MID$(B$, C, 1)
```

```
NEXT C
```

```
PRINT B$
```

```
END SUB
```

13. Study the following program and answer the question [2×1=2]

```
DECLARE-SUB SERIES (A, R,N)
```

```
CLS
```

```
INPUT X, Y, Z
```

```
CALL SERIES (X, Y, Z)
```

```
END
```

```
SUB SERIES (A, R, N)
```

```
FOR I = 1 TO N
```

```
PRINT A
```

```
A = A*(A*B) + 1
```

```
NEXT
```

```
END SUB
```

- a. What will be the output if the user enters 4, 5, 6 respectively? [3×3=9]

- b. What types of parameters are the x, y, z? [3×3=9]

14. Write programs to:

- a. Find area of circle using FUNCTION ..... END FUNCTION.

- b. Display following series: 1, 1, 2, 3, 5 ..... up to 10<sup>th</sup> term using Sub procedure.

- c. A text file named as "rec.txt" contains name, address, post, contact number.  
Write a program to display the record of those person whose name start from "R" and post ="sales manager".

**Set 11**

Time: 1 hr 30 Minutes

Full Marks: 50

**Group 'A'**

**Computer Fundamental (22 Marks)**

1. Answer the following questions: [5×2 = 10]
- Define guided transmission media. List four guided media.
  - What is email? Write any two advantages of email?
  - What is software security? Mention any two software security measures.
  - Define computer virus. List any two precautions for protecting a PC from virus.
  - What is cyber law? What are the objectives of introducing cyber law in Nepal in 2061 B.S.?
2. a. Do as instructed: [2×1 = 2]
- (A10)<sub>16</sub> into (0<sub>2</sub>)
  - (601)<sub>10</sub> into (0<sub>8</sub>)
- b. Solve: [2×1 = 2]
- $-1011_2 + 1010_2 + 111_2$
  - $1001 \div 101$
3. Match the following. [4×0.5 = 2]

**Group A**

**Group B**

- |                       |                       |
|-----------------------|-----------------------|
| i. Repeater           | ( ) Network model     |
| ii. Internet explorer | ( ) Multimedia device |
| iii. Peer to Peer     | ( ) Network component |
| iv. DVD               | ( ) Web browser       |

4. State whether the following statements are True or False [4×0.5=2]

- Ring topology requires more cable than Star topology.
- Computer may transmit through email.
- Coaxial cable carries data in pulse of light.
- The moving graphics image is called video.

5. Write the full form of : [4×0.5= 2]

TCP/IP, CD- ROM, MIPS, BCD

6. Supply the technical term for the following statements. [4×0.5= 2]

- A device that connects two or more dissimilar networks.
- Process of transferring a copy of file from a local computer to a remote computer.
- An integration of text, sound, video and animation for information presentation.
- Collection of two nibbles.

**Group 'B'**

**Database (10 Marks)**

7. Answer the following questions:

- Define database. Give two examples of DBMS. [3×2 = 6]
- What is a table? Write any two reasons for opening table in design view.
- What is Report? Differentiate between Report and Form.

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8. Select the best answer. [4×0.5=2]
- Column heading of database is ... ...  
 i. data              ii. record  
 iii. field           iv. file
  - A comparison operator supported by MS Access is ...  
 i. Mod              ii. Is Null  
 iii. Among           iv. AND
  - Alternate name for field name is ...  
 i. Required          ii. Format  
 iii. Validation rule    iv. Caption
  - The default field size of Text data type is ...  
 i. 50              ii. 255  
 iii. 55              iv. 155

9. Match the following. [4×0.5=2]

**Group A**

- OLE object      () Field property
- Indexing          () DBMS
- Database          () Action query
- Updating data    () Data type  
 () Telephone directory

**Group 'C'**

**QBASIC Programming (18 Marks)**

10. Answer the following questions. [3×1=3]

- What is a local variable?
- List any two similarities of QBASIC and C language.
- Write the functions of  
 i. FILES statement and  
 ii. EOF() function.

11. Write the output of the following program. [2]

DECLARE FUNCTION CONVERT(N)

CLS

LET NUM = 1010

D = CONVERT (NUM)

PRINT D

END

FUNCTION CONVERT(N)

DO UNTIL N = 0

R = N MOD 10

S = R\*2^Q + S

Q = Q + 1

N = INT (N/10)

LOOP

CONVERT = S

END FUNCTION

12. Rewrite the following program after correcting the bugs: [2]

REM program to display a word having vowel characters

DECLARE FUNCTION VOWELS(W\$)

CLS

INPUT "Enter a word"; W\$

R\$ = VOWEL (W\$)

PRINT R\$

END

FUNCTION VOWELS(W\$)

FOR P=1 TO LEN (W\$)

ES=LEFT\$ (W\$, P, 1)

$$R\$ = R\$ + E\$$$

NEXT P

$$\text{VOWELS}(W\$) = R\$$$

END SUB

13. Study the following program and answer the given questions! [2]

DECLARE SUB TEST()

DIM SHARED A\$, B\$, C\$

CLS

FOR P = 1 TO 3

READ A\$, B\$, C\$(3)

NEXT P

DATA "BAGMATI", "SAGARMATH", KOSHI

CALLTEST

END

SUB TEST

L\$ = A\$

IF LEN(B\$) > LEN(L\$) THEN L\$ = B\$

IF LEN(C\$) > LEN(L\$) THEN L\$ = C\$

PRINT L\$

END SUB

Questions:

- List the global variable used in the above program.
- What is the output of the above program?

14. a. Write a program to define a function procedure to display area of sphere where a user has to input the required data in the main module. [3]

[Hint: Area of sphere =  $4\pi r^2$ ]

- b. Write a program to define a sub procedure to display the following series of number: 1, 1, 2, 3, 5, ... up to 13<sup>th</sup> terms. [3]

- c. A sequential data file "Employee.rec" consists of numerous records of employees of a company on the following fields: employee's name, post, salary and status (i.e. permanent or temporary). Write a program to read records of the "Employee.rec" file and display records of permanent employees whose post is manager. [3]

**Set 12**

**Group A**

**Computer Fundamental (22 Marks)**

1. Answer the following questions: [5×2=10]

- Define computer network. Mention its four components.

- Mention any four services provided by internet.

- What is hardware security? List any four measures of hardware security control.

- What are the objectives of making computer virus? Describe briefly.

- What do you mean by cyber ethics? Mention any two commandments of computer ethics.

2. a. Do as instructed: [2 × 1 = 2]

- (4D1)<sub>16</sub> into (0)<sub>2</sub>
- (104)<sub>10</sub> into (0)<sub>8</sub>

- b. Solve: [2 × 1 = 2]

- $-1111_2 + 1001_2 + 1011_2$

- $10110_2 + 11_2$

## Computer Science (Optional Second)

**Match the following.**

**Group A**

- i. Hub
- ii. www.nepalnews.com
- iii. Client Server
- iv. Search Engine

**[4 × 0.5 = 2] Group B**

- ( ) Network model
- ( ) Network device
- ( ) Google.com
- ( ) URL

**State whether the following statements are True or False.** [4 × 0.5 = 2]

- a. Star topology requires more cable than Bus topology.
- b. Multimedia technology is used in computer based training.
- c. UTP is an example of broad band media.
- d. Cyber Law is introduced in Nepal in 2062 B.S.

**Write the full form of:** [2]

MAC, DVD, WWW, URL

**Supply the technical term.** [4 × 0.5 = 2]

- a. A device that connects two similar networks.
- b. A software that detects and removes self reproducing and destructive program.
- c. Copy of data and program.
- d. Collection of four bits.

**Group 'B'****Database Management System (10 Marks)**

**7. Answer the following questions:** [3 × 2 = 6]

- a. What does data type refer to? Write any four data types used in Microsoft Access.
- b. List any four features of DBMS.
- c. What is a form? What is the purpose of preparing form in MS-ACCESS DATABASE?

**8. Choose the correct answer:** [4 × 0.5 = 2]

- a. In a table if you need to define a field which stores picture, graph as data, you will define the data type for the field as
  - i. memo
  - ii. Hyperlink
  - iii. OLE object
  - iv. Text
- b. The default size of text field in a MS-access database table is
  - i. 50
  - ii. 55
  - iii. 255
  - iv. 65535
- c. If we want to define business rule to restrict database table from recording wrong data, it will be through
  - i. validation text
  - ii. validation rule
  - iii. index
  - iv. input mask
- d. If you need to define a field which stores remark, character, hobbies like long text description as data in a table, you need to select data type for the field as
  - i. Hyperlink
  - ii. OLE object
  - iii. Text
  - iv. memo

**9. Match the following:** [4 × 0.5 = 2]

- |                 |                                                          |
|-----------------|----------------------------------------------------------|
| a. database     | (i) enhances searching job in a table                    |
| b. sort         | (ii) a field type of MS-ACCESS table                     |
| c. yes/no       | (iii) default value for a numeric data type              |
| d. long integer | (iv) an organized collection of related data/information |
|                 | (v) data collected from field visits                     |

- Group C [Programming - 18 marks]**
10. a. Differentiate between parameter and argument. List any two features of C language. [1+1]
- b. Write the functions of the following keywords. [1]
- OPEN, RMDIR

**11. Write the output of the following program.** [4 × 0.5 = 2]

```
DECLARE SUB Out (T$)
CALL Out ("TENSION")
END
SUB Out(T$)
S= LEN (T$)
D=S\2
IF S MOD 2 = 0 THEN
L$= LCASE$(LEFT$(T$,D))
R$= UCASE$(RIGHT$(T$,D))
ELSE
L$= LCASE$(LEFT$(T$,D+1))
R$= UCASE$(RIGHT$(T$,D))
ENDIF
PRINT L$+ R$
END SUB
```

**12. Rewrite the following program debugging where necessary.** [2]

```
REM to print record of the students whose score are above 200.
OPEN "EMP.DAT" FOR APPEND AS #1
DO WHILE EOF(1)=0
INPUT #1, NS, A%, SC
SELECT CASE SC
CASE IS >200 THEN
PRINT NS, A%, SC
END SELECT
LOOP
CLOSE #4
END
```

**13. Read the following program and answer the questions.** [2]

```
DECLARE FUNCTION OUT (V)
N = 25
PRINT OUT (N)
END
FUNCTION OUT (T)
B=T ^ (1/2)
OUT=B
END FUNCTION
```

**Questions :**

- i. List local variable(s) in above program.
  - ii. List the statement that calls the function.
- 14. Write Qbasic programs to solve the following problems.**
- a. Using SUB ... END SUB, write a program to print the sum of first 15 even numbers. [3 × 3 = 9]

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- b. Using User Defined Function PP( SP, CP), write a program to input Selling price and Cost Price in parameter Then calculate Profit or Loss percentage. Use the function to return the profit or Loss percent.
- c. Write a program to input Name, Address, Post, Salary and Date of Join of 50 employees. Then store them in EMP.DAT file. The program should opt. the user to add new record each time.

### Set 13

#### Group A

#### Computer Fundamental (22 Marks)

1. Answer the following questions : [5x2=10]

- a. Describe bus topology with diagram.  
 b. Write one example each of web browser, URL, domain type and search engine.  
 c. Write the importance of back up and password for data security.  
 d. List any four types (categories) of computer viruses  
 e. List any four components of multimedia.

2. a. Convert as instructed: [2x1=2]

- i.  $(401)_{10}$  to  $()_{16}$ . ii.  $(305)_8$  to  $()_2$ .

- b. Perform the following calculation [2x1=2]

- i.  $10100_2 - 1011_2$  ii.  $1011_2 \times 11_2$

3. Choose the best alternative. [4x0.5=2]

- a. The first internet..... is developed by DOD in 1969.  
 i. DARPA Net ii. NSF Net  
 iii. ARPA Net iv. Intra net.  
 b. Which one is not a Cyber crime.  
 i. hacking ii. cracking  
 iii. chatting iv. software piracy  
 c. ..... is not a network operating system.  
 i. Novell Netware ii. Win NT  
 iii. MAC OS iv. LINUX  
 d. Which is not a hardware component of multimedia?  
 i. CD- ROM ii. Sound Card  
 iii. Floppy iv. Speaker:

4. Match the following. [4x0.5=2]

- Group A**
- a. TCP/IP  
 b. VR  
 c. search engine  
 d. Radio wave
- Group B**
- ( ) computer crime  
 ( ) wireless media  
 ( ) Internet  
 ( ) Multimedia  
 ( ) yahoo.com

5. Supply the technical term for the following statements. [4x0.5=2]

- a. A pattern of LAN computers.  
 b. Two way mode of communication.  
 c. The tools or technique to protect physical parts of computer system.  
 d. Self guided principles to be followed by computer users.

6. Write the full form of: [4x0.5=2]

URL, WWW, DARPA, UTP

#### Group 'B'

#### Database (10 Marks)

7. Answer the following questions: [3x2=6]

- a. What is form? Write the different ways in which you can create a form.  
 b. Name any four data types with their storage size in MS-ACCESS.  
 c. What is table? What is data validation?

8. Match the following: [4x0.5=2]

#### Group A

Primary key

OLE object

Field

Sort

#### Group B

a column in table

a collection of raw facts

arranging data

unique type of data

Pictures

9. Fill in the blanks: [4x0.5=2]

a. \_\_\_\_\_ data types stores logical data.

b. \_\_\_\_\_ query modifies data in a table/query.

c. A row in a table is a \_\_\_\_\_.

d. \_\_\_\_\_ allows to display data in a printable format.

#### Group 'C'

#### (Programming - 18 Marks)

10. a. Write any two differences between user-defined function and built-in function. [1]

- b. "C is also known as middle level programming language." Justify this statement. [1]

- c. Write down the function of CHDIR command and LINE INPUT # statement with examples. [1]

11. Debug the following program: [2]

REM To count total no. of student (s) who is/are passed.

REM File contains Student ID and marks of three subjects.

CLS

WHILE NOT EOF (1)

OPEN I, 1#, marks.dat

INPUT #1, ID, S1, S2, S3

IF S1 >= 32, S2 >= 32, S3 >= 32 THEN

X = X + 1

END IF.

X = 1

WEND

PRINT "Total record (s) = "; X

CLOSE #1

END

12. Find the output of the given program. [2]

DECLARE SUB PATERN (m)

CLS

CALL PATERN (16)

END

SUB PATERN (m)

P# = 11111; T = 1

FOR I = 20 TO m STEP -1

PRINT TAB (T); P# ^ 2

[P# = P# \ 10]

T = T + 1

NEXT

END SUB

13. Read the following program and answer the given questions: [2x1=2]

DECLARE FUNCTION DEMO (N)

CLS

N = 1234

PRINT DEMO (N)

END

FUNCTION DEMO (N)

WHILE N > 0

S = S \* 10 + N MOD 10

WEND

DEMO = S

END FUNCTION

1. What is the purpose of above given User-Defined function?
2. What will be the value of N after completion the loop?

14. a. Write a program to check whether a given number is divisible by 2 or 3 or both or none using FUNCTION procedure. [3]

- b. Create a Sub Procedure which takes a character as parameter and prints as the following pattern. [3]

```

*
**


```

- c. Write a program to create a data file named "book.dat" to store Book's ID, Book's Name and Author. The program should terminate on the user's choice. [3]

### Set 14

#### Group A

##### Computer Fundamental (22 Marks)

1. Answer the following questions: [5×2=10]
- a. What is MAN? Write a difference between LAN and WAN.
  - b. Write any two symptoms and two characteristics of computer virus.
  - c. What is backup? How backup is important in data security?
  - d. What is email? Write the protocols used in transfer of messages between the email server and the client.
  - e. What is multimedia? Write different components used in multimedia technology.

2. Perform the following binary calculations: [2×1=2]

- a.  $(1101_2 + 1101_2) - 11001_2$
- b.  $1101_2 \times (1101_2 - 11_2)$

3. Convert the following as indicated: [2×1=2]

- a.  $1007_{10}$  into octal
- b.  $ABC_{16}$  into binary

4. Write the full forms of: [4×0.5=2]

- ISOC ARPA MAC URL

5. Match the following: [4×0.5=2]

| A          | B                                          |
|------------|--------------------------------------------|
| ISP        | Software/data security                     |
| Sound card | regular maintenance                        |
| VOIP       | company provides internet / email services |
| Anti-virus | audio output used in e-phone               |

[4×0.5=2]

6. Select the best alternative:

- a. Protocol used in bus topology
  - i. Ethernet
  - ii. Token ring
  - iii. FTP
  - iv. ARP

- b. Pick the odd one out

- i. STP
- ii. UTP
- iii. Coaxial
- iv. Microwave

- c. Cyber law of Nepal was initiated in:
  - i. 2002
  - ii. 2003
  - iii. 2004
  - iv. 2005

- d. Which one is not a data security method?
  - i. encryption
  - ii. insurance
  - iii. defragmentation
  - iv. password

[4×0.5=2]

7. Give a technical term:

- a. Quantity of data transmitted over a network.
- b. An individual computer connected to a network.
- c. A network system where all the resources are limited only to the server.
- d. Virtual space created by the networks, internet to make communication.

Group 'B'

MS Access (10 Marks)

[3×2=6]

8. Answer the following questions.

- a. List any four advantages of DBMS.
- b. What is a field? List any two uses of primary key.
- c. What is a query? List any two uses of Form in MS-Access.

9. Choose the best alternative.

- a. Which is not MS-Access object?
  - i. Form
  - ii. Table
  - iii. Query
  - iv. Caption
- b. A field property that limits the data to be entered in a field is .....
  - i. Format
  - ii. Validation Rule
  - iii. Input Mask
  - iv. Indexed
- c. The logical data type of MS-Access is ...?
  - i. Yes/No
  - ii. On/Off
  - iii. True/False
  - iv. All of the above
- d. The ready to print information is .....
  - i. Query
  - ii. Report
  - iii. Database
  - iv. Table

10. State whether the following statements are True or False.

- a. In the Table Datasheet view, a user can change the data type of a field.
- b. A row of a table is known as field in MS-Access.
- c. A query can be created without tables.
- d. A report can be used to modify data of a table.

Group C

Programming (18 Marks)

11. a. What is modular programming?  
b. Write any two keywords of C language.  
c. Write the function of FILES and CLOSE.

12. Debug the following program.  
Open Sub Sum(N\$)

REM to print alternate characters of the string.  
INPUT "enter a string";S\$ CALL Sum(N\$)  
END

SUB SUM( S\$)

FOR K = 1 to Len(S\$) STEP -2

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- j\$=j\$+MIDS(\$\$, 1, k)  
NEXT K  
PRINT j\$  
END SUB
- 13. Write the output of the following program.** [2]
- ```
DECLARE FUNCTION CHECK (A, B)
READ X, Y
PRINT check(X, Y)
DATA 10, 6
END
FUNCTION Check (A, B)
IF A>B THEN SWAP A, B
FOR R=A To B
IF R MOD 2 = 0 THEN Q=Q+R
NEXT R
Check = Q
END FUNCTION
```
- 14. Read the following program and answer the questions.** [2x1=2]
- ```
DECLARE FUNCTION B(N$)
RS= "INFORMATION"
PRINT B(R$)
END
FUNCTION B(N$) T=0
FOR A= 1 to len(N$)
M$=MIDS(N$, A, 1)
Q= Q + ASC(M$)
NEXT A B=Q
END FUNCTION
```
- Questions:**
- What types of function are B() and ASC()?
  - When the value of A = 4, What is the value of M\$?
15. a. Using user defined function Result(), write a program to input marks obtained by a student in 4 different subjects (English, Nepali, computer, maths), then check whether the student pass or fail. [Pass mark=40 in each subject]. [3]
- b. Write a program using sub procedure module to find the sum of all even numbers between 13 to 50. [3]
- c. Write a program to open a sequential data file 'EMP.DAT'. Then print all female records on the screen. The field list are Employee's name, post, salary and gender. [3]
- e. List any four preventive measures for protecting computer from computer viruses.
2. a. Convert the given number system as indicated. [2x1=2]
- (205)<sub>10</sub> into (?)<sub>8</sub>
  - (12F)<sub>16</sub> into (?)<sub>2</sub>
- b. Perform the binary calculations as indicated. [2x1=2]
- $101 \times 11$
  - $11011011 \div 110$
3. Select the correct answer. [4x0.5=2]
- Which is not the network protocol?
    - TCP/IP
    - STP
    - FTP
    - All of the above
  - Which of the following is not cyber crime?
    - Forgery
    - Authentication
    - Salami saving
    - Hacking
  - In an email address hamronepal@yahoo.com, what does 'yahoo' refer?
    - User account name
    - Domain name
    - Top level domain name
    - None of the above
  - Which of the following is not the component of multimedia?
    - Pixel
    - Text
    - Audio
    - Video
4. Write the technical terms for the following: [4x0.5=2]
- A program that displays the contents of web pages on a client computer.
  - The law that governs the legal issue of cyberspace.
  - The moving images of real events.
  - A secret word that provides accessibility to a user to use a file, application or computer system.
5. Give full form of the following abbreviations. [4x0.5=2]
- IRC
  - POP
  - TELNet
  - VRML
6. Match the followings: [4x0.5=2]
- | Group A     | Group B                                                          |
|-------------|------------------------------------------------------------------|
| a. Switch   | i. Regenerates electric signals.                                 |
| b. Hub      | ii. Converts digital signals into analog signals and vice versa. |
| c. Repeater | iii. Joins multiple networks having different protocols.         |
| d. Gateway  | iv. Repeats the signals to all the connected nodes.              |
|             | v. Repeats the signals to only the destination node.             |
- Set 15**

### Group 'A'

#### Computer Fundamental (22 Marks)

1. Answer the following questions: [5x2=10]
- What is communication media? List any two advantages of client-server network model.
  - What is the Internet? List any two advantages of email.
  - List any four advantages of multimedia.
  - What is the role of UPS in the computer security?

### Group 'B'

#### Database Management (10 Marks)

7. Answer the following questions: [3x2=6]
- Write any two advantages of electronic database.
  - What is primary key field?
  - What is form? Why is it prepared?
8. Select the best alternative. [2]
- A row of a database is .....  
    - record
    - entity
    - field
    - data
  - Which is not an object of MS - Access?  
    - Form
    - Table
    - OLE Object
    - Query

- c. A software to manage database is .....  
 i. electronic database ii. data  
 iii. DBMS iv. Record
- d. Which is the default data type of Ms-Access?  
 i. Number ii. Text  
 iii. Auto number iv. Currency

**Match the following.**

**Group A**

- a. Sorting  
 b. Input mask  
 c. Number  
 d. Look up wizard

**Group B**

- a data type  
 grouping records  
 tax amount  
 double  
 field property

[2]

**Group C**

**Programming (18 Marks)**

10. a. What do you mean by modular programming? [1]  
 b. What type of programming language is C? [1]  
 c. Give the functions of COMMON SHARED and SHARED statements respectively. [1]

11. **Debug the following program:** [2]

REM to calculate reverse value of given no. along with sum of existing digits.

DECLARE FUNCTION mirror (N,SUM)

CLS

INPUT "ENTER A POSITIVE NUMBER"; A

REV=MIRROR(N, S)

PRINT "THE REVERSE VALUE IS.:";REV

PRINT "SUM OF DIGITS IS.:";S

END

FUNCTION mirror (N,S)

M=N

DOS=S + c% \* A

R = M / 10

RE = RE\*1+R

S = S + R

M = INT(M/10)

LOOP WHILE M = 0

Mirror = RE

END FUNCTION

12. **Find the output of the given program.** [2]

DECLARE SUB NUMBER (A as integer, S as integer)

DIM n as integer

CLS

INPUT "ENTER A POSITIVE INTEGER.:"; N

CALL NUMPRO(N, SUM)

PRINT "sum of all the values is.:";sum

END

SUB NUMPPRO(A as integer, S as integer)

LET S=0

FOR c% = 1 TO 10

PRINT C%\* A

NEXT c%

END SUB

[Note: Assume, while executing the program the value of N is input as 3]

13. **Read the following program and answer the following questions:** [2]

DECLARE FUNCTION MIN(X, Y)

CLS

A = 10 : B=20

PRINT "MINIMUM VALUE IS.:";MIN(A, B)

PRINT MIN(100,200)

PRINT MIN(200,200)

END

FUNCTION MIN(X, Y)

IF X < Y THEN

MIN = X

ELSE

MIN = Y

ENDIF

END FUNCTION

- a. How many times the function MIN() will be executed while running the above program?

- b. What will be the output of the program?

14. a. Write a BASIC program to display and count total number of records existing in a sequential data file named "info.dat". [3]

- b. Write a BASIC program introducing a user-defined function named TSA( ) to calculate total surface area of a cuboid on the basis of its length, breadth and height input by the user. The function should calculate the value and return to the calling module. [HINT: TOTAL SURFACE AREA = 2(LB + BH + LH)] [3]

- c. Write a BASIC program introducing a "BASIC.SUB" named strpro( ) to ask user inputting a string and print out the first and last character of the string in capital form along with the total number of character existing in the string. [3]

