

SET I

SEE Model Question

F.M. : 50

Group 'A' (10 Marks)

1. Answer the following questions in one sentence. [6×1=6]

a. What is search engine?

Search engine is the communication program that searches documents on the basis of specified keywords and returns a list of the web links that matches the keywords.

b. What is the business done through internet?

The business done through internet is e-commerce.

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

Text data type is used to store alpha numeric characters or special symbols in MS-Access.

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

Design view is used to modify a table in MS-Access

e. What is modular programming?

Modular programming is a technique used to divide program into many small, manageable, logical and functional modules or blocks.

f. Write any two features of C language.

Any two features of C language are:

- a) Reduces complexity and easy to code.
- b) Reuse of modules and flow of control is clear.

2. Write appropriate technical terms for the following: [2×1=2]

a. Law that governs the legal issues of cyberspace.

Cyber Law

b. The smallest unit to represent information on a quantum computer.

Qubit (Quantum bit)

3. Write the full forms of the following: [2×1=2]

a. STP: Shielded Twisted Pair

b. WAP: Wireless Application Protocol

Group 'B' [24 Marks]

4. Answer the following questions. [9×2=18]

a. What is computer network? Enlist any two advantages of it.

Computer network is a group of two or more computers and devices connected to each other through wired or wireless media to exchange data and information and share hardware, software and other resources.

Any two advantages of computer network are:

- 1. A network connected computers can share hardware devices such as scanner, printer, hard disk, etc.
- 2. Networking also provides the facility of data and software backup system.

b. What is computer ethics? Write any two of them.

Computer ethics is a set of moral principles or code of conducts that regulate the use of computers systematically without making harm to other users.

Any two cyber ethics are:

- Do not use a computer to publish fake information.
- Do not search the file or record of other people.

c. What is software security? Write any two measures of hardware security.

Software security is the protection of computer systems and applications from threats, such as hacking, virus attacks, and unauthorized access, to ensure their confidentiality, integrity, and availability.

Any two measures of hardware security are:

- Insurance
- Power Protection Device

d. What is M-Commerce? Write any two important services.

M-Commerce refers to the process of buying and selling of goods and services through wireless handheld devices such as smartphones, tablets or personal digital assistants (PDAs).

Any two important services are:

Purchasing airlines tickets, purchasing movie tickets, Restaurant / Hotel booking and reservation
Fund Transfer, Top – Up Charges Fund Transfer

e. What is IoT? Write any two importance of it.

IoT is a system of interrelated computing device to exchange information over a network without human-to-human or human to computer interaction.

Any two importance of IoT are:

- It reduces the human effort, so it saves a lot of time.
- Information is easily accessible from any place at any time on any device.

f. What is database? Give any two examples.

A collection of systematically organized inter-related data which store, organize and retrieve data is called a database. E.g. Dictionary and Telephone Directory.

g. What is primary key? List any two advantages of it.

A primary key is a field or combination of fields in a table that uniquely identifies each record, and is used to establish relationships between tables and enforce data integrity.

Any two advantages of primary key are:

- It sets the relationship between tables.
- It reduces and controls duplication of record in a table

h. What is data sorting? List any two advantages of using it.

The process of arranging all the records in a table either ascending or descending order based on field or fields is known as sorting.

Any two advantages of sorting are:

Sorting helps to organize data and make it easier to find and retrieve specific information.

Sorting can save time and improve efficiency by allowing users to quickly access the data they need

i. What type of work is done in MS-Access using form and query object.

- Form provides graphical interface to view, modify and add data in a table or multiple linked tables.
- Query is used to view, retrieve, change and analyze records from a table or multiple linked tables based on specified condition.

5. Write the output of the given program: Show with dry run in table.

[2]

```

DECLARE SUB SHOW(A)
CLS
N=87
CALL SHOW(N)
END
SUB SHOW(A)
DO
B=A MOD 6+3
IF B MOD 4=0 THEN GOTO AA
PRINT B;
AA:
A=A-10
LOOP WHILE A>=50
END SUB

```

Dry run table

N	A	B = A MOD 6+3	B MOD 4=0		A=A-10	PRINT B
87	87	87 MOD 6 + 3=6 3+3=6	6 MOD 4=0 2=0 NO		87-10=77	
	77	77 MOD 6 + 3 =8 5+3=8	8 MOD 4=0 0=0YES	77>=50 yes	77-10=67	6
	67	67 MOD 6 + 3=4 1+3=4	4 MOD 4=0 0=0 YES	67>=50 yes	67-10=57	6
	57	57 MOD 6 + 3=6 3+3=6	6 MOD 4=0 2=0 NO	57>=50 yes	57-10=47	
	47			47>=50 no		

The output of a program is:

6 6

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

[2]

```

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

```

Debugged program:

```

REM to add record in an existing file
CLS
OPEN "Record.Dat" FOR APPEND AS #1
AA:
INPUT "Enter Name, Class and Roll No."; Nm$, Cl, Rn
WRITE #1, Nm$, Cl, Rn
INPUT "More records"; Y$
IF UCASE$(Y$)="Y" THEN GOTO AA
CLOSE #1
END

```

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

[2×1=2]

```

OPEN "Detail.dat" FOR INPUT AS #1
OPEN "Temp.dat" FOR OUTPUT AS #2
INPUT "Enter name of the students"; SS
FOR I=1 TO 10
INPUT #1, Nm$, Cl, A
IF SS<>Nm$ THEN
WRITE #2, Nm$, Cl, A
END IF
NEXT I
CLOSE #1, #2
KILL "Detail.dat"
NAME "Temp.dat" AS "Detail.dat"
END

```

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

The main objective of the program given above is to delete the record according to the entered name.

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

Yes, the program will display the error message and it won't delete the record.

8. Convert / Calculate as per the instruction.

[4×1=4]

- a. $(11001101)_2 = (?)_{16}$

Soln:

Converting Binary to octal

Binary value in four bits	1100	1101
Octal number	C	D

$$(11001101)_2 = (CD)_{16}$$

- b. $(524)_{10} = (?)_2$

Soln:

		Remainder
2	524	
2	262	0
2	131	0
2	65	1
2	32	1
2	16	0
2	8	0
2	4	0
2	2	0
2	1	0
2	0	1

$$(524)_{10} = (1000001100)_2$$

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

		1	0	1	0
		<u>×</u>	<u>1</u>	<u>1</u>	<u>0</u>
		0	0	0	0
	1	0	1	0	×
+ 1	0	1	0	×	×
<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>0</u>
	-	1	0	1	1
1	1	0	0	0	1

$(1010)_2 \times (110)_2 - (1011)_2 = (110001)_2$

a. $(10110)_2 \div (101)_2$

101)	1	0	1	1	0	(	100
	<u>-1</u>	<u>0</u>	<u>1</u>				
	0	0	0	1	0		
					<u>-0</u>		
				1	0		

Quotient=100

Remainder=10

9. a. Write a program in QBASIC that asks length, breadth and height of room and calculate its area and volume. Create a user defined function to calculate area and sub-program to calculate volume. Hint: $[A=L \times B]$, $[V=L \times B \times H]$

```

DECLARE FUNCTION AREA(L,B)
DECLARE SUB VOL(L,B,H)
CLS
INPUT "Enter Length"; L
INPUT "Enter Breadth"; B
INPUT "Enter Height"; H
PRINT "Area of room="; AREA(L,B)
CALL VOL(L,B,H)
END

```

```

FUNCTION AREA(L,B)
AREA = L * B
END FUNCTION

```

```

SUB VOL(L,B,H)
V=L*B*H
PRINT "Volume of Room="; V
END SUB

```

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

```
OPEN "Record.txt" FOR INPUT AS #1
CLS
WHILE NOT EOF(1)
INPUT #1, R, N$, G$, E, N, M, C
IF UCASE$(G$)="F" AND C>=90 THEN
PRINT R; N$; G$; E; N; M; C
END IF
WEND
CLOSE #1
END
```

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

```
#include<stdio.h>
#include<conio.h>
int main()
{
int n;
printf("Enter any number: ");
scanf("%d", &n);
if(n % 2 == 0 )
printf("%d is even number", n);
else
printf("%d is odd number", n);
return 0;
}
```

OR

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

```
#include<stdio.h>
#include<conio.h>
int main()
{
int i, s=0;
i=1;
while(i<=5)
{
printf("%d \n", i);
s = s + i;
i++;
}
print("%d \n Sum=", s);
return 0;
}
```

SET 2

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

a) Write the name of any two search engines.

Ans: The name of any two search engines is google.com and ask.com

b) What is social media?

Ans: Social Media is an online tool that helps us to stay connected with the whole world

c) Which data type is suitable to store photographs of students in MS-Access?

Ans: The suitable data type to store photographs of students in MS-Access is OLE object.

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

Ans: Design View is used to modify a table structure in MS-Access.

e) Which statement is used to call sub-procedure?

Ans: CALL statement is used to call sub-procedure.

f) Write any two data types used in C language.

Ans: Any two data types used in C language are int and char.

2. Write appropriate technical term for the following. 2x1=2

a) A system of copying data and information reading in computer into another location. Backup

b) A company which provides services of Internet. Internet Service Provider (ISP)

3. Write the full form of the following. 2x1=2

a) FTP: File Transfer Protocol

b) MAN: Metropolitan Area Network

4. Answer the following questions. 9x2=18

a) What is computer network? Write any two advantages of it.

Ans: Computer network is a group of two or more computers and devices connected to each other through wired or wireless media to exchange data and information and share hardware, software and other resources. Any two advantages of computer network are:

1. A network connected computers can share hardware devices such as scanner, printer, hard disk, etc.
2. Networking also provides the facility of data and software backup system.

b) Define software security. Write any two protection measures for it.

Ans: Software security is the protection of computer systems and applications from threats, such as hacking, virus attacks, and unauthorized access, to ensure their confidentiality, integrity, and availability.

Any two protection measures for software security are:

1. Backup
2. Password

c) What is search engine? Write any two popular search engines.

Ans: Search engine is the communication program that searches documents on the basis of specified keywords and returns a list of the web links that matches the keywords.

The name of any two popular search engines is google.com and ask.com

d) Define e-commerce. Write any two benefits of it.

Ans: E-Commerce refers to electronic transactions such as buying, selling and exchanging of goods, services and information over computer communication network such as the Internet.

Any two benefits of e-commerce are:

1. Faster buying/selling procedure, as well as easy to find products.
2. There are no geographical limitations, can deliver service globally.

e) Write any two advantages and disadvantages of social media.

Ans: Any two advantages of social media are:

1. It creates awareness and innovates the way people live
2. Social media let us share anything with others around the world

Any two disadvantages of social media are:

1. Personal data and privacy can be easily hacked and shared on the internet.
2. More chances of creating fake accounts.

f) What is DBMS? Write any two advantages of it.

Ans: Database management system (DBMS) is a computerized system that stores data, processes them and provides information in an organized form.

Any two advantages of DBMS are:

1. Large volume of data can be stored and updated easily.
2. Provides data integrity and security.

g) What is primary key? Write any two features of it.

Ans: Primary Key is a special field or group of fields in the table that uniquely identifies each record from the database.

Any two features of primary key are:

1. To reduce and control duplication of the record in a table.
2. To set the relationship between tables.

h) Define field and record.

Ans: A field is a column in a table which contains information about a certain type for all records. Field is a smallest unit of information.

A record is a row in a table which contains information about single items in a database. Record is complete set of information.

i) Define form. Write any two uses of it.

Ans: Form is one of the MS-Access database objects that is primarily used to create an interface for entering data in a table or multiple linked tables.

Any two uses of form are:

1. Form displays complete record one at a time, so we can view and modify records using the form.
2. Forms provide GUI (Graphical Users Interface) using which users interact with MS-Access database.

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

```
DECLARE SUB ABC(A)
```

```
CLS
```

```
A=2
```

```
CALL ABC(A)
```

```
END
```

```
SUB ABC(A)
```

```
FOR J= 1 TO 5
```

```
PRINT A;
```

```
A=A+3;
```

```
NEXT J
```

```
END SUB
```

Dry run

A	J=1 TO 5	PRINT A;	A=A+3
2	1 to 5 Yes	2	2+3=5
5	2 to 5 Yes	5	5+3=8
8	3 to 5 Yes	8	8+3=11
11	4 to 5 Yes	11	11+3=14
14	5 to 5 Yes	14	14+3=17
17	6 to 5 No (loop exits)		

The output of the program is

2 5 8 11 14

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

```
DECLARE SUB Series ( )
```

```
CLS
```

```
EXECUTE Series
```

```
END
```

```
SUB Series( )
```

```
REM Program to generate 1 1 2 3 5 .....upto the 20th terms
```

```
A=1
```

```
B=1
```

```
FOR ctr=10 to 1
```

```
DISPLAY A:B:
```

```
A=A+B
```

```
B=A+B
```

```
NEXT ctr
```

```
END Series ( )
```

Debugged Program

```
DECLARE SUB Series ( )
```

```
CLS
```

```
CALL Series
```

```
END
```

```
SUB Series( )
```

```
REM Program to generate 1 1 2 3 5 .....upto the 20th terms
```

```
A=1
```

```
B=1
```

```
FOR ctr=1 TO 10
```

```
PRINT A: B;
```

```
A=A+B
```

```
B=A+B
```

```
NEXT ctr
```

```
END SUB
```

7. 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 R=1 TO X

S=S+I

NEXT R

TEST=S

END FUNCTION

a) How many parameters are used in the above program?

Ans: The parameters are used in the above program is one.

b) How many times does the statement S=S+I execute in the above program?

The statement S=S+I will execute 100 times in the above program

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

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

Soln:

Paired Binary Digit	1111	1101
Binary Equivalent value	F	D

$(11111101)_2 = (FD)_{16}$

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

Soln:

2	245	Remainder
2	122	1
2	61	0
2	30	1
2	15	0
2	7	1
2	3	1
2	1	1
	0	1

$(245)_{10} = (11110101)_2$

iv) $(101110)_2 \div (110)_2$

110)	101110(	0111
	<u>000</u>	
	1011	
	<u>-110</u>	
	1011	
	<u>-110</u>	
	1010	
	<u>-110</u>	
	100	

Quotient = 111

Remainder = 100

iii) $(1010)_2 \times (101)_2 = (?)_2$

		1	0	1	0
		<u>x</u>	<u>1</u>	<u>0</u>	<u>1</u>
		1	0	1	0
	0	0	0	0	x
1	0	1	0	x	x
1	1	0	0	1	0

$(1010)_2 \times (101)_2 = (110010)_2$

9 a) Write a program in QBASIC that asks length, breadth of a room and calculate its area and perimeter. Create a user defined function to calculate area and sub program to calculate perimeter.

[Hint: [Area=LxB], [p=2(L+B)]

```

DECLARE FUNCTION AREA (L,B)
DECLARE SUB PER(L,B)
CLS
INPUT "Enter Length"; L
INPUT "Enter Breadth"; B
PRINT "Area of rectangle="; AREA(L,B)
CALL PER(L,B)
END

```

```

FUNCTION AREA(L,B)
AREA = L*B
END FUNCTION

```

```

SUB PER(L,B)
P=2*(L+B)
PRINT "Perimeter of rectangle="; P
END SUB

```

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

```

OPEN "salary.dat" FOR OUTPUT AS #1
DO
CLS
INPUT "Enter name"; N$
INPUT "Enter Salary"; S
INPUT "Enter Post"; P$
WRITE #1, N$, S, P$
INPUT "Do you want to continue(Y/N)"; CH$
LOOP WHILE UCASE$(CH$)="Y"
CLOSE #1
END

```

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

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int n;
    printf("Enter any number: ");
    scanf("%d", &n);
    if(n>0)
        printf("%d is positive number",n);
    else if(n<0)
        printf("%d is negative number",n);
    else
        printf("%d is zero number",n);
    return 0;
}
```

OR

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

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int i, a;
    i=1;
    a=1;
    while(i<=10)
    {
        printf("%d \n", a);
        a=a+2;
        i++;
    }
    return 0;
}
```

SET 3

**SEE Grade Promotion 2078 (2022) Solved Computer Science
Group 'A'**

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

a) What is web browser?

Ans: Web browser is a computer program that access web pages and displays them on the user's computer.

b) Mention any two services provided by internet.

Ans: Any two services provided by internet are Search engine and E-mail.

c) What is the default extension of MS-Access?

Ans: The default extension of Ms-Access is :
.mdb (2003 version) and .accdb (2007 version).

d) Which object of MS-Access is used to retrieve data from the table?

Ans: Query is used to retrieve data from a table.

e) Write any one advantage of Modular Programming.

Ans: Any one advantage of modular programming is:
The debugging of the program becomes easier and faster

f) Mention any two basic data type of C language?

Ans: Any two basic data types of C language are: int and char.

2. Write appropriate technical term for the following:

a) Network of Networks. Internet

b) Computer program that protects computer from computer virus. Antivirus software

3. Write the full form of the following:

a) POP: Post Office Protocol

b) AI: Artificial Intelligence

Group B (24 Marks)

4. Answer the following questions. 9x2=18

a) What is computer network? List any two importance of it.

Ans: Computer network is a group of two or more computers and devices connected to each other through wired or wireless media to exchange data and information and share hardware, software and other resources.

Any two importance of computer network are:

1. A network connected computers can share hardware devices such as scanner, printer, hard disk, etc.
2. Networking also provides the facility of data and software backup system.

b) What is computer ethics? Write down any two ethics of it.

Ans: Computer ethics is a set of moral principles or code of conducts that regulate the use of computers systematically without making harm to other users.

Any two computer ethics are:

- Do not use a computer to publish fake information.
- Do not search the file or record of other people.

c) What is computer security? Write any two hardware security measures.

Ans: Computer security refers to protecting computer and its content from damage, theft or misuse and action to prevent such incidents.

The name of any two hardware security measures are:

Regular Maintenance

Power Protection device (Volt guard, Spike guard, UPS)

d) Give two differences between E-Commerce and Traditional Commerce.

Ans: Any two differences between E-Commerce and Traditional Commerce are:

E-Commerce	Traditional Commerce
E-commerce refers to the commercial transactions or exchange of information, buying or selling product/services electronically with the help of internet.	Traditional commerce refers to the commercial transactions or exchange of information, buying or selling product/services from person to person without use of internet.
In e-commerce delivery of goods takes time.	In traditional commerce delivery of goods is instant.

e) Write any two symptoms of computer virus.

Ans: Any symptoms of computer virus are:

- Program takes long time to load.
- Increased use of disk space and growth in file size.

f) What is DBMS? Write any two examples.

Ans: DBMS is a computerized system that stores data, processes them and provides information in an organized form

Any two examples of DBMS are MS-Access and Oracle.

g) What is primary key? List any two advantages of it.

Ans: Primary Key is a special field or group of fields in the table that uniquely identifies each record from the database

Any two advantages of primary key are:

3. To reduce and control duplication of the record in a table.
4. To set the relationship between tables.

h) What is data sorting? List any two advantages of using it.

Ans: The process of arranging all the records in a table either ascending or descending order based on field or fields is known as sorting. Sorted data is easier to handle than unsorted data.

Any two advantages of using it are:

1. Sorting helps to organize data and make it easier to find and retrieve specific information.
2. Sorting can save time and improve efficiency by allowing users to quickly access the data they need.

i) List the field name from the following table structure.

Symbol No.	Name	Marks
00100200Q	Surya Gurung	85
00100201R	Birendra Sharma	91

Ans: The field names are Symbol No., Name and Marks.

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

```

DECLARE SUB Result(C$)
C$="COMPUTER"
CALL Result(C$)
END
SUB Result(C$)
FOR C=1 TO LEN(C$) STEP 2
M$=MID$(C$,C,1)
N$=N$+M$
NEXT C
PRINT N$
END SUB

```

Dry run

C\$	C=1 TO 8 step 2 Yes	M\$= MID\$(C\$,C,1)	N\$ =N\$+M\$	PRINT N\$
COMPUTER		C	C	CMUE
	3 to 8 Yes	M	CM	
	5 to 8 Yes	U	CMU	
	7 to 8 Yes	E	CMUE	
	9 to 8 No Loop Exits			

The output of the program is

CMUE

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

```
REM to display records from existing file.  
CLS  
OPEN "cmp.txt" FOR APPEND AS #1  
WHILE NOT EOF(#1)  
    WRITE #1, eN$, post$, salary  
    PRINT eN$, post$, salary  
CLOSE#1  
END
```

Debugged Program

```
REM to display records from existing file.  
CLS  
OPEN "cmp.txt" FOR INPUT AS #1  
WHILE NOT EOF(1)  
    INPUT #1, eN$, post$, salary  
    PRINT eN$, post$, salary  
WEND  
CLOSE #1  
END
```

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

2x1=2

```
DECLARE FUNCTION Prod(A,B)  
CLS  
INPUT "Enter first number"; A  
INPUT "Enter second number"; B  
PRINT "The product of the two number="; prod(A,B)  
END  
FUNCTION Prod(A,B)  
P=A*B  
Prod=P  
END FUNCTION
```

a) List all the numerical variables used in the program.

Ans: The numerical variables used in the program are A, B and P

b) List the local variable/s used in the above program.

The local variable/s used in the program are A, B and P.

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

i) $(214)_{10} = (?)_2$

Soln:

2	214	Remainder
2	107	0
2	53	1
2	26	1
2	13	0
2	6	1
2	3	0
2	1	1
1	0	1

$$(214)_{10} = (11010110)_2$$

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

Soln:

Hexadecimal digit	A	B	C
Binary Equivalent value	1010	1011	1100

$$(ABC)_{16} = (101010111100)_2$$

iii) $(1011)_2 \times (101)_2 + (101)_2 = (?)_2$

		1	0	1	1
		x	1	0	1
		1	0	1	1
	0	0	0	0	x
1	0	1	1	x	x
1	1	0	1	1	1

Now,

$$\begin{array}{r} 110111 \\ + 101 \\ \hline 111100 \end{array}$$

$$(1011)_2 \times (101)_2 + (101)_2 = (?)_2 = (111100)_2$$

iv) $(101110)_2 \div (110)_2$

11)	10101	111
	-11	
	100	
	-11	
	11	
	-11	
	00	

Quotient = 111

9 a) Write a program to calculate Area of circle using Function procedure and use SUB procedure to calculate its circumference in Q-Basic. [Hint: $A=\pi r^2$], $C=2\pi r$]

```

DECLARE FUNCTION AREA (R)
DECLARE SUB CIR(R)
CLS
INPUT "Enter Radius"; R
PRINT "Area of circle="; AREA(R)
CALL CIR(R)
END

FUNCTION AREA(R)
AREA = 22/7*R^2
END FUNCTION

SUB CIR(R)
C=2*22/7*R
PRINT "Circumference of circle="; C
END SUB

```

b) Students Name, Class, Section and Address are stored in a data file called "STUDENT.dat". Write a program to print all the records of students.

```

OPEN "student.dat" FOR INPUT AS #1
CLS
PRINT "Name", "Class", "Section", "Address"
WHILE NOT EOF(1)
INPUT #1, N$, C, S$, A$
PRINT N$, C, S$, A$
WEND
CLOSE #1
END

```

10. Write a program in C language to input a number then check whether the number is fully divisible by 5 or not.

```

#include<stdio.h>
#include<conio.h>
int main()
{
int n;
printf("Enter any number: ");
scanf("%d", &n);
if(n%5==0)
printf("%d is fully divisible by 5",n);
else
printf("%d is not fully divisible by 5",n);
return 0;
}

```

OR

Write a program in C language to display the series 2, 4, 6, 8 up to 10th terms.

```

#include<stdio.h>
#include<conio.h>
int main()
{
int i, a;
i=1;
a=2;
while(i<=10)
{
printf("%d \n", a);
a=a+2;
i++;
}
return 0;
}

```

SET 4

**SEE (Grade Promotion) 2078 – 2022
Opt II Computer Science**

Group A

1. Answer the following questions in one sentence:

a) What is search engine?

Ans: Search engine is the communication program that searches documents on the basis of specified keywords and returns a list of the web links that matches the keywords.

b) What is the business done through the internet called?

The business done through the internet is called e-commerce.

c) What is the default size of text field in MS-Access?

Ans: The default extension of Ms-Access is :
.mdb (2003 version) and .accdb(2007 version).

d) Which data type is used to store photo in MS-Access?

Ans: The suitable data type to store photographs of students in MS-Access is OLE object.

e) What is looping?

Ans: Looping is the process of repeating the execution of a statement or a block of statements guided by a condition and is terminated when the given condition is satisfied.

f) List any two data types used in C-Programming language.

Any two data types used in C-Programming language are int and char.

2. Write appropriate technical term for the following:

a) A program that can disinfect a file from virus. Antivirus software

b) Learning through the electronic media. E-learning

3. Write the full form of the following.

a) G2G – Government to Government

b) ISP – Internet Service Provider

4. Answer to the following questions:

a) What is network topology? List any two types of network topology.

Network topology is the inter-connected pattern of network components
Any two types of network topology are bus topology and ring topology.

b) What is antivirus software? Name any two popular antivirus software.

Ans: Antivirus software is a computer program used to prevent, detect, and remove malware.
Any two popular antivirus software are Kaspersky and NOD 32.

c) What is cyber law and cyber crime?

Ans The law which governs the legal issues in the cyber space regarding the internet or WWW for digital data processing and transaction is called cyber law.
Cyber crime refers to criminal activities that are carried out using computers, networks and the internet.

d) What is virtual reality? Write any two areas where virtual reality are used.

Ans: Virtual Reality (VR) is the use of computer technology to create a simulated environment that doesn't actually exist, that can give a feel of near real world with all or some of senses experiencing the virtually simulated environment.

Any two areas where virtual reality is used are Gaming and Education and Training.

e) What is password? Write any two importance of password protection.

Ans: A password is a string of characters including letters, digits, or other symbols which confirms the identity of a user.

Any two importance of password protection are:

1. Password secures the data by protecting the data from unauthorized access.
2. We have to keep the password secure and strong so that unauthorized users may not gain access to the resource and misuse it with our identity

f) What is DBMS? Write four objects of MS-Access.

Ans: DBMS is a computerized system that stores data, processes them and provides information in an organized form.

Any four objects of MS-Access are Table, Form, Query and Report.

g) What are validation text and validation rule?

Ans: Validation Text is a field property which displays an error message that appears if the data entered is invalid according to the specified validation rule.

Validation Rule is a field property which is used to limit the values that can be entered into a field.

h) What is form? Write any two advantages of it.

Ans: Form is one of the MS-Access database objects which provides graphical interface to view, modify and add data in a table or multiple linked tables.

Any two advantages of form are:

3. Form displays complete record one at a time, so we can view and modify records using the form.
4. Forms provides GUI (Graphical Users Interface) using which users interact with MS-Access database.

i) What is record? Why is primary key necessary in record?

Ans: A record is a row in a table which contains information about single items in a database. Record is complete set of information.

A primary key is necessary in a database record because it reduce and control duplication of the record in a table, sets the relationship between tables and identifies each record of a table uniquely.

5. Write down the output of the given program:

```
DECLARE SUB Series(A)
```

```
CLS
```

```
A=20
```

```
CALL Series(A)
```

```
END
```

```
SUB Series(A)
```

```
FOR K=1 to 5
```

```
PRINT A;
```

```
A=A+10
```

```
NEXT K
```

```
END SUB
```

Dry Run Table

A	K=1 to 5	PRINT A;	A=A+10
20	1 to 5 yes	20	20+10=30
30	2 to 5 yes	30	30+10=40
40	3 to 5 yes	40	40+10=50
50	4 to 5 yes	50	50+10=60
60	5 to 5 yes	60	60+10=70
70	6 to 5 no Loop exits		

The output of the program is:

20 30 40 50 60

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

```

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

```

Debugged Program

```

REM program to make a word reverse
DECLARE FUNCTION Rev$(N$)
CLS
INPUT "Enter a word"; N$
PRINT "Reversed is"; Rev$(N$)
END
FUNCTION Rev$(N$)
FOR K=LEN (N$) To 1 STEP-1
B$=B$+MID$(N$,K,1)
NEXT K
Rev$=B$
END FUNCTION

```

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

```

DECLARE FUNCTION SUM(N)
CLS
INPUT "Enter any number"; N
X=SUM(N)
PRINT "The sum of individual digit is "; X
END
FUNCTION SUM(N)
WHILE N<>0
R=N MOD 10
S=S+R
N=INT(N/10)
WEND
SUM=S
END FUNCTION
    
```

a) Write the function of INT.

Ans: It rounds and returns the largest integer less than or equal to a numeric expression

b) How many times does the WHILEWEND loop repeat if the value of N is 123?

Ans: The WHILEWEND loop repeats 3 times if the value of N is 123.

8. Convert/Calculate as per the instruction:

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

Soln:

Paired Binary Digit	1100	1101
Binary Equivalent value	C	D

$(10110011)_2 = (CD)_{16}$

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

2	524	Remainder
2	262	0
2	131	0
2	65	1
2	32	1
2	16	0
2	8	0
2	4	0
2	2	0
2	1	0
2	0	1

$(524)_{10} = (1000001100)_2$

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

		1	0	1	0
		×	1	1	0
		0	0	0	0
	1	0	1	0	×
<u>1</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>×</u>	<u>×</u>
1	1	1	1	0	0
	-	1	0	1	1
1	1	0	0	0	1

$(1010)_2 \times (110)_2 - (1011)_2 = (110001)_2$

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

101)	10110(	100
	-101	
	00010	
	- 0	
	10	

Quotient = 100

Remainder = 10

9. Answer the following questions.

- a) Write a program in QBASIC that will asks the user to input length, breadth and height of a room then use SUB procedure calculate its volume and FUNCTION procedure to calculate its area of four walls.

```

DECLARE SUB VOL(L,B,H)
DECLARE FUNCTION AREA(L,B,H)
CLS
INPUT "Enter length"; L
INPUT "Enter breadth"; B
INPUT "Enter height"; H
CALL VOL(L, B, H)
PRINT "Area of four walls="; AREA(L, B, H)
END

```

```

SUB VOL(L, B, H)
V=L*B*H
PRINT "Volume of room"; V
END SUB

```

```

FUNCTION AREA(L, B, H)
AREA=2*H*(L+B)
END FUNCTION

```

- b) A sequential data file called "Record.dat" has stored data under the field heading Roll No., Name, Gender, English, Nepali, Maths and Computer. Write a program to display all the information of those students whose marks in English is more than 40.

```

OPEN "Record.dat" FOR INPUT AS #1
CLS
WHILE NOT EOF (1)
    INPUT #1, R, N$, G$, E, NP, M, C
    IF E > 40 THEN PRINT R, N$, G$, E, NP, M, C
WEND
CLOSE #1
END

```

10. Write a program in C language that asks any two numbers and displays the greatest among them.

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int a,b;
    printf("Enter any two numbers:\n ");
    scanf("%d %d", &a, &b);
    if(a>b)
        printf("The greatest number is %d", a);
    else
        printf("The greatest number is %d", b);
    return 0;
}
```

OR

Write a program in C-Langauge to display the series with their sum. 1,2,3,4....upto 10th terms.

```
#include <stdio.h>
int main()
{
    int j, sum = 0;
    printf("The first 10 natural number is :\n");
    for (j = 1; j <= 10; j++)
    {
        sum = sum + j;
        printf("%d ", j);
    }
    printf("\nThe Sum is : %d\n", sum);
}
```
