

Computer Science		PAPER: II
Time: 2.10 Hours	(SUBJECTIVE TYPE)	Marks: 60

SECTION-I

(MS-ACCESS)

2. Write short answers to any SIX (6) questions: (12)

(i) Who is user/end user?

Ans The user or end-user is simply a person who uses the computers for his specific need. He might have a moderate knowledge of computers, computer science and information technology, and his need to use computers may be entertainment, education, or professional task. He does not need to know the in-depth knowledge of the computer system, but instead he should be aware of installed software he intends to use.

(ii) Define secondary key.

Ans A secondary key is non-unique field that is used as a alternate key. Sometimes records are required to access by a field other than the primary key. In these situations, another key that is used is called secondary key.

(iii) Define the term feasibility study.

Ans Feasibility study is also called preliminary investigation of the required database. It involves the area identification and selection *i.e.*, which area or aspect is to be selected to start with. After the project is selected, it is allocated a specific fund and a proper planning is chalked out for its practical implementation.

(iv) List ingredients of data modeling.

Ans Ingredients of Data Modeling:

- (i) Entities / Objects
- (ii) Attributes
- (iii) Relationships

(v) What is Microsoft Access?

Ans It is one of the most popular and powerful DBMS. It provides the features to the users to create and maintain

database. We can create tables, forms, queries and reports using Microsoft Access.

(vi) What is database wizard?

Ans Database wizard makes very easy to create a database. You can choose from several examples of database in the Database Wizard for such storage uses as contact information, inventory control, a ledger, and so on. You can create and then modify these databases to meet your own needs.

(vii) Define the term degree of relation.

Ans The number of fields or attributes in a relation is called the degree of a relation. The degree of a relation is usually not changed once the table has been created. A relation with six fields has a degree of 6. Consider the following relation; STUDENT (Roll_No, Name, Class, Subject, Marks, Address). In this relation degree is 6.

(viii) List three methods for creating table.

Ans Three methods for creating tables in MS-Access are:

- (i) Creating table in design view.
- (ii) Creating table by using wizard.
- (iii) Creating table by entering data.

(ix) Write any two uses of reports.

Ans Following are the two uses of reports:

1. Reports are used to retrieve and present data in a formatted way.
2. Some reports are simply a list of the records in the database, one record after the other.

C-LANGUAGE

3. Write short answers to any SIX (6) questions: (12)

(i) Describe linker and loader.

Ans Linker;

The linker combines different library files to the object file and produces an executable file with .exe extension.

Loader:

For execution, the loader loads the executable files in the memory. It is also system software. Ctrl + F9 key is used to load and run the programs.

(ii) What is structured programming language?

Ans A programming language in which the logic of the program is divided into a number of smaller sections. Each section of the program performs a specific function. These programs are easy to write, debug and modify.

(iii) Write the purpose of compiler.

Ans The translator program that translates the complete source code (written in high-level language) as a whole in machine code before execution is called compiler.

(iv) Define identifier.

Ans Identifiers are names of variables, arrays, functions, structures, labels, etc.

(v) What do you mean by keyword?

Ans These are the words which have predefined meaning in C language. There are 32 keywords in C language. These words cannot be used or redefined for any other purpose in the C program. All keywords are written in lower case e.g., double, long, void, etc.

(vi) Differentiate between declaring and defining a variable.

Ans Variable declaration tells the compiler the name and type of value stored in the variable whereas variable definition means to set aside the memory location for the variable.

(vii) Find the error in the following code segment:

```
int a, b;  
a = -10;  
if (a < 0);  
b = a * a;  
printf("Result = %f", b)
```

Ans There exists two errors in the statement:

(a) No semicolon ; should be used in line III.

(b) Format specifier % f is used instead of % d.

(viii) What is the output of the following code:

```
int a, b, c;  
a = 10;  
b = 3;  
if (a % b == 1)  
c = 0;  
else  
c = 1;  
printf ("%d", c);
```

Ans The output of the code is "0".

(ix) Predict the output of the following code:

```
int price = 10;  
if (price != 10)  
price = 0  
else  
price += 2;
```

Ans The output of the code is "12".

(C-LANGUAGE)

4. Write short answers to any SIX (6) questions: (12)

(i) What is the use of "getch" function?

Ans It is used to get a single character as input from the keyboard during the execution of the program.

(ii) Why is the ampersand character (&) used in scanf function?

Ans Ampersand (&) in scanf function: The ampersand is the address-of operator. In C, if we want to pass parameters by reference the address of (&) operators should be used. The scanf () function reads formatted input and has to put this input into something like a variable.

(iii) Write the general form of printf function.

Ans Syntax:

```
printf(format string, &var1, &var2, &var3, .....);  
printf (format string);
```

(iv) Define nested loop.

Ans Nested loop mean loop inside the body of another loop is called nested loop. Nesting can be done up to any level. Nested loop increases the complexity of the program.

(v) Convert the following code into while loop.

```
for (int count = 1; count <= 2; count ++)  
printf ("count");
```

Ans

```
int count = 1;  
while (count <= 2);  
{  
    Printf ("Count")  
    Count ++ ;  
}
```

(vi) Why is sentinel value used in loops?

Ans In computer programming, a sentinel value is a special value in the context of an algorithm which uses its presence as a condition of termination, typically in a loop or recursive algorithm.

(vii) How many (maximum) values can a function return using return statement?

Ans Only single value can a function return using return statement.

(viii) What type of variables are declared outside any function?

Ans Global variables are declared outside any function.

(ix) How is a file opened?

Ans Before reading from or writing to a file, it must be opened. All standard file handling functions of C are declared in `stdio.h`. Thus it is included in almost every program. To open a file and associate it with a stream, the `fopen()` function is used. Its prototype is shown here:

```
FILE* fopen (const char* filename, const char* mode);
```

SECTION-II
(MS ACCESS)

Note: Attempt any ONE (1) question.

5. Write notes on any four of the following file types: (8)

- (i) Master file (ii) Transaction file
(iii) Backup file (iv) Program file
(v) Data file (vi) Sequential file

Ans (i) Master File:

These files are latest updated files and never become empty. When the information in records is changed, it is updated in Master file.

(ii) Transaction File:

In these files, data is kept before processing. These can be temporary files. Data in these files retained till the master file is updated.

(iii) Back up File:

These are permanent like master files. It is used to keep copy of data. These are used to protect data. There are usually stored on external storage devices.

(iv) Program File:

These files contain software instructions. Program files contain source code or object code.

(v) Data File:

These files contain data used by program files. These are created by software being used.

(vi) Sequential File:

As the name refers, these files are stored or created on the storage media in the order. The records are entered *i.e.*, one after another in the sequence.

6. Define functional dependency? How partial dependencies effect a relation? (8)

Ans For Answer see Paper 2020, Q.6.

SECTION-III

Note: Attempt any TWO (2) descriptive answers of the following questions.

(C-LANGUAGE)

7. Define an error. Describe the types of errors in C programming language. (8)

Ans Error:

The errors in a program are called BUGS. The process of finding and removing these errors is called debugging.

Types of Errors:

There are three types of errors:

- (i) Syntax Errors
- (ii) Runtime Errors
- (iii) Logical Errors

(i) Syntax Errors:

A syntax error occurs when the program violates one or more grammar rules of C language. The compiler detects these errors as it attempts to translate the program. If a C statement has syntax error, it cannot be translated and the Program could not be executed.

(ii) Runtime Errors:

A runtime error occurs when the program directs the computer to perform an illegal operation, such as dividing a number by zero. Runtime errors are detected and displayed by the computer during the execution of a program. When runtime error occurs, the computer stops executing the program and displays a diagnostic message.

(iii) Logical Errors:

Logical errors occur when a program follows a faulty algorithm. The compiler cannot detect logical errors; therefore, no error message is reported from the compiler. Moreover, these errors don't cause the program to be crashed, that's why, these are very difficult to detect. Logical errors can only be detected by thorough testing of the program.