

## CHAPTER 5: Class X SUB PROGRAMS AND FILE HANDLING

### 4. What is the difference between user-defined function and built-in function.

| USER – DEFINED FUNCTIONS(UDF)   | BUILT-IN FUNCTIONS   |
|---|--|
| <ol style="list-style-type: none"> <li>These are written by the user</li> <li>These are known as Procedures.</li> <li>These functions return a single value.</li> <li>Its syntax: LINE NO DEF FN name [expression]</li> <li>Can be defined as <math>10 \text{ DEF FN } X(L,W)=2*(L+W)</math></li> </ol> | <ol style="list-style-type: none"> <li>These are written by the language developer</li> <li>These functions are known as Pre-Defined, Built-in, Standard, Library or Intrinsic functions.</li> <li>Can be used by calling them as <code>PRINT SQR(15)</code></li> <li>These are of two types Numeric and String functions</li> </ol> |

### 5. Differentiate between Sub-Routine and Function.

**Ans:** `GOSUB.....RETURN` statement is used to make sub-routine. It is also called Sub-Program. A subprogram is the small program.

**FUNCTIONS:** perform specific tasks. These are Library functions defined by the language developers. We can access them just by writing their name as `PRINT SQR (15)`, which will give you **Square Root** of 15. These functions are of two types **Numeric functions** and **String functions**.

### 6. Describe the use of `GOSUB.... RETURN` statement.

**Ans.:** It is used to make sub-routine. It is the small program that starts with `GOSUB` Line No. The `RETURN` statement is used to return the control back. It is also called Sub-Program.

### 7. What is the difference between Sequential and Random files?

#### SEQUENTIAL FILES:

- Sequential Access Files stores data in a sequence.
- We can access any record in the same sequence.
- A position pointer is used to move to the next record one-by-one until to the required record.
- Sequential files are slower than direct access files.
- We can't access any record directly

#### RANDOM FILES:

- Data stored in sequential order
- But we can access any record directly.
- A position pointer can directly access any record.
- Random access files are most efficient and fast

### 8. Describe the way of Opening, Closing, Reading and Writing in a Sequential File

**OPENING FILE:** `OPEN "FileName.ext" FOR mode AS #[buffer]`. For example  
`10 OPEN "DATA.TXT" FOR OUPUT AS # 1`

**CLOSING FILES:** `CLOSE #[buffer]`. Example `50 CLOSE #1`

**READING FILE:** To read a file, `INPUT #` statement is used as: `INPUT #1, stuName, stuRN, stGrade`

**WRITING FILE:** To write data, `WRITE#` statement is used as `WRITE #1 stuName, stuRN, stGrade`

### 9. Differentiate between data file and program file.

**DATA FILE:** contains data and information. These files are linked with program files during run-time or compilation time.

**PROGRAM FILE:** contains instructions for the computer. These files perform different operations on data file like sorting, read, writing etc.

### 10. Write down the purpose of the following functions: i). `ABS()`, `INT()`, `SQR()`, `SIN()`, `TAB()`.

| <b>ABS() FUNCTION:</b>                    | <b>X</b>     | <b>ABS (X)</b> |
|---|--------------|----------------|
| <b>Purpose :</b> To print absolute value. | <b>-5</b>    | <b>5</b>       |
| <b>Syntax :</b> <code>ABS ( X )</code>    | <b>-10.4</b> | <b>10.4</b>    |
| <b>Example.</b>                           | <b>-9.10</b> | <b>9</b>       |



**Q11. Write a program to get full name of any person and return the number of characters in first name.**

```
10 10 CLS
20 INPUT "ENTER YOUR FULL NAME";N$
30 FLN = LEN(N$)
40 FOR K = 1 TO FLN
50 IF MID$(N$,K,1) <> (" ") THEN C=C+1 ELSE PRINT "1st Name Is ";C "Characters Long": END
60 NEXT
70 END
```

**Q12 Write a program that print ASCII characters from 1 to 255.**

```
10 Cls
20 For K = 1 To 255
30 Print Chr$(K);
40 Next
50 End
```

**Q13. Write a program that is used for the conversion of temperature from CELSIUS scale to Fahrenheit scale with the help of DEF FN function.**

```
10 CLS
20 DEF FNS(C) = 9/5 * C + 32
30 INPUT "ENTER TEMPERATURE IN C";T
40 PRINT "TEMPERATURE IN F=";FNS(T)
50 END
```

**Q14. Write a program to calculate and print following formula by using user-defined function.**

**Combination =  $n! / k! (n-k)!$**

```
10 CLS: NF = 1: KF = 1: DF = 1
20 DEF FNX(N, K, L) = N / (K * L)
30 INPUT "ENTER VALUE FOR N";N
40 INPUT "ENTER VALUE FOR K";K
50 FOR C = 1 TO N
60     NF = NF * C
70 NEXT
80 FOR D = 1 TO K
90     KF = KF * D
100 NEXT
110 DNK = N - K
120 FOR E = 1 TO DNK
130     DF = DF * E
140 NEXT
150 PRINT "COMBINATION =";FNX(NF,KF,DF)
160 END
```

**Q15. Write a program to implement a Telephone Directory using Sequential Access files. Your program should be capable of writing the Name, Telephone Number and Address of your friends to a sequential file.**

**To Create A New Data File And Insert Data In It**

|  |  |
|--|--|
| 10 CLS                                 | To Open Data File & Read Data From It. |
| 20 OPEN "DATAFILE" FOR OUTPUT AS #1    | 10 CLS                                 |
| 30 INPUT "ENTER NUMBER OF RECORDS";REC | 20 OPEN "DATAFILE" FOR INPUT AS #1     |
| 40 WRITE #1, REC                       | 30 INPUT #1, REC                       |
| 50 FOR K = 1 TO REC                    | 40 FOR K = 1 TO REC                    |
| 60     INPUT "ENTER NAME";N\$          | 50     INPUT #1, N\$, TNS\$, ADSS\$    |
| 70     INPUT "ENTER TEL NO. ";TNS\$    | 60     PRINT "NAME: ";N\$              |
| 80     INPUT "ENTER ADDRESS";ADSS\$    | 70     PRINT "TELEPHONE NO.: ";TNS\$   |
| 90     WRITE #1, N\$, TNS\$, ADSS\$    | 80     PRINT "ADDRESS: ";SS\$          |
| 100 NEXT K                             | 90 NEXT K                              |
| 110 CLOSE #1                           | 100 CLOSE #1                           |
| 120 END                                | 110 END                                |

# Chapter 5 General Questions

## SUB PROGRAMS AND FILE HANDLING

**What is the purpose of system Defined Functions.**

**Ans:** System defined functions make the program easier. Basically these programs have been written someone else and have been incorporated in the system. These are also called library function, standard functions or built-in functions.

**What are most important BASIC library function?**

**Ans:** The most important BASIC'S library functions are,

Numeric functions. ABS, SQR, INT, LOG, SIN, COS, TAN etc.

String Functions. LEFT\$, RIGHT\$, MID\$,CHR\$,SPACE\$ etc.

**What is a subroutine?**

**Ans:** It is a small program, which is written once and can be used many times anywhere in a program. It returns the control back to the next executable statement just by RETURN statement. Subroutines are used to break up the program into modules. A subroutine can call another subroutine.

**7. What is difference between GOTO and GOSUB/RETURN statement?**

A GOTO statement transfers control to another point/line which never send control back to the following statement. In case of GOSUB statement the control is always returned back to the next statement following the GOSUB statement on the execution of RETURN statement.

**8. What are files?**

**Ans:** Files: There are two types of files data files & program files. Basically a file is a collection of instructions/data. Data files are useful for storing large amount of data that can be accessed more than once. Data can be accessed from these files by using file-handling technique & by word processors.

**1. What do you understand by structured programming?**

**Ans:** A structured program is written in modules or blocks. It allows only one entrance and only one exit from each module. It makes easy the logic of the program. These programs are much easier to correct.

**2. What is subprogram?**

**Ans:** A subprogram is the small program. It is written once and can be called anywhere in the program. There are two types of subprograms. (a) Function subprogram (b). Subroutines programs.

**3. What is the purpose of system Defined Functions.**

**Ans:** System defined functions make the program easier. these programs are written by the developers of the basic language. These are also called library function, standard functions or built-in functions.

**4. What are most important BASIC library function?**

**Ans:** The most important BASIC'S library functions are,

Numeric functions. ABS, SQR, INT, LOG, SIN, COS, TAN etc.

String Functions. LEFT\$, RIGHT\$, MID\$,CHR\$,SPACE\$ etc.

**5. What would be the output of the following OUTPUT**

```
PRINT SGN(22.74)    1
PRINT INT(-8.8)    -9
PRINT ABS(-17.53)  17.53
PRINT FIX(-17.53)  -17
PRINT SQR(25)      5
PRINT SIN( $\pi$ )    0
```

**6. Use LEFT\$ and SPACE\$ function to write a program to print**

FOOT            FOOTBALL

..... A number of times until S key is pressed to stop it.

10. PRINT "PRESS 'S' TO STOP"

20 LET A\$ = "FOOTBALL"

30 C\$ = INKEY\$

40 IF C\$ = "S" THEN END

50 PRINT LEFT\$(A\$,4);SPACE\$(10);A\$

60 GOTO 30

**Find the error in the following programs.**

```

10  GOSUB 150
20  GOSUB 200          GOSUB 170 (CORREDCTED)
30  END
150 PRINT "BOOK"
160 RETURN
170 PRINT "SUNDAY"
180 RETURN

```

**11. What is the purpose of GOSUB/RETURN statement.**

Ans: GOSUB/RETURN statements are used to develop a subroutine

```

10  GOSUB 150
20  GOSUB 170
30  END
150 PRINT "BOOK"
160 RETURN
170 PRINT "SUNDAY"
180 RETURN

```

**Q11. What is difference between GOTO and GOSUB/RETURN statement?**

A GOTO statement transfers control to another point without keeping track of the next sequentially executable statement and therefore, in general controls never transfers back to the following statement. In case of GOSUB statement the control is always returned back to the next statement following the GOSUB statement on the execution of RETURN statement.

**Q12. Write a main routine that uses subroutines 200 and 400 to PRINT a block letter E..**

```

10  CLS
20  GOSUB 200
30  GOSUB 400
40  GOSUB 200
50  GOSUB 400
60  GOSUB 200
70  END
200 PRINT "E E E E E E E E"
210 RETURN
400 PRINT "E"
410 PRINT "E"
420 PRINT "E"
430 RETURN

```

**Q13. What is DEF FN statement?**

**PURPOSE:** To define the function.

**Syntax:** DEF FNname(Argument)=Expression

**Explanation:** Here name is the legal variable name. If more than one variable is given as argument, it should be separated by comma. For example

|    |                            |    |                           |
|----|----------------------------|----|---------------------------|
| 10 | CLS                        | 10 | CLS                       |
| 20 | DEF FNarea(R)=(22/7 * R^2) | 20 | DEF FNad(x,y)=((a+b)/2)   |
| 30 | INPUT "Radius";R           | 30 | INPUT "ENTER TWO NO.";a,b |
| 40 | PRINT FNarea( R )          | 40 | PRINT FNad(a,b)           |
| 50 | END                        | 50 | END                       |

## OBJECTIVE QUESTIONS.

### Multiple Choice Questions

1. A program is written in modules have one entry point and one exit point in each module is  
i) Structured ii) Unstructured iii) LOOP
2. In a program there are multiple entry and exit points to and from the modules is  
i) Structured ii) Unstructured iii) LOOP
3. In Structured design each module has entry point  
i) One ii) Two iii) Three
4. In Structured design each module has exit point  
i) One ii) Two iii) Three
5. Usually a statement used in unstructured programming.  
i) GOTO ii) RETURN iii) OPEN
6. The section of the program that carry out a specific task is  
i) Subroutine ii) Debugging iii) Bug
7. Are used to compute and return a single value is  
i) Variable ii) Flow chart iii) Function
8. A function always returns a value.  
i) Double ii) Single iii) Constant
9. The types of function are  
i) One ii) Two iii) Three
10. Built in functions are also called  
i) String ii) Library iii) Screen
11. Library functions related to numbers are  
i) Alphabets ii) Numeric iii) String
12. Library functions related to string are  
i) Alphabets ii) Numeric iii) String
13. A function which return absolute value is  
i) FIX ii) ABS iii) INT
14. A function which return natural logarithm of a number is  
i) FIX ii) SIN iii) LOG
15. A function which return cosine of an angle is  
i) FIX ii) COS iii) TAN
16. A function which return sine of an angle is  
i) SIN ii) COS iii) TAN
17. A function which return tangent of an angle is  
i) SIN ii) COS iii) TAN
18. A function which return left most characters of a string is  
i) RIGHTS ii) LEFTS iii) MIDS
19. A function which return right most characters of a string is  
i) RIGHTS ii) LEFTS iii) MIDS
20. A function which return characters form the middle a string is  
i) RIGHTS ii) LEFTS iii) MIDS
21. A function respond to any key without pressing the ENTER key is  
i) INKEY\$ ii) OUTKEY\$ iii) None
22. Function developed by the user is known as  
i) System defined ii) Library iii) User defined

23. GOSUB statement always used with  
 i) RETURN                      ii) GOTO                      iii) WEND
24. A statement used to open a file in file handling is  
 i) OUTPUT                      ii) CLOSE                      iii) OPEN
25. A statement used to close a file in file handling is  
 i) OUTPUT                      ii) CLOSE                      iii) OPEN
26. A statement used to print values of a file in file handling is  
 i) WRITE                      ii) CLOSE                      iii) OPEN
27. A statement used to define a function is  
 i) DEF FN                      ii) WRITE                      iii) INPUT
28. A function is used to leave blanks spaces  
 i) SQR                      ii) SPACES\$                      iii) LEFTS\$

## FILL IN THE BLANKS

1. A **Structured** program is written in modules have one entry point and one exit point in each module.
2. In a **unstructured** program is written in modules have multiple entry and exit points from each module.
3. A **Structured** design each module has only **one** entry point.
4. A **Structured** design each module has only **exit** entry point.
5. **GOTO** statement is often in unstructured programming.
6. A module is section of a program that performs a **specific** task.
7. Functions are used to calculate and return a **single** value.
8. There are **two** types of functions.
9. **System defined** and user defined are types of function.
10. **System defined** functions are also known as Library functions.
11. There are **two** types of system defined functions.
12. Numeric functions are related to **numbers** only.
13. String functions are related to **string** only.
14. **ABS** returns absolute value of the given number.
15. **SQR** returns absolute value of the given number.
16. GOSUB and **RETURN** statements are used to develop the subroutine.
17. **DEF FN** statement is used to define the function.
18. **OPEN** statement is used to open a file in file handling.
19. **CLOSE** statement is used to close a file in file handling.
20. **WRITE** statement is used to print values in file handling.
21. A function returns only single value, a subroutine may returns **many** values.
22. A subroutine is a complete and independent program and is placed outside the **main** program.
23. A subroutine itself is a **small** program.
24. In GOSUB statement control is always returned **back**.
25. The GOSUB statement is used to invoke a **subroutine**.
26. User defined function may be numeric or **string**.
27. Subprogram can be called anywhere in the program.
28. The functions, which are written by the BASIC developer, are called **system defined** functions.
29. Two types of function subprograms system defined and **user defined** functions
30. System defined function are identified by **three** letters names.