Analytical Questions Solutions

1. Study the given program and answer the given questions. [2]

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

a) List the formal and actual parameters used in the program given above.

Formal parameter= A$ Actual parameter = T$

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

The library function used in the above program is LEN( ) and MID$( ).

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

```
DECLARE SUB PC$ (N)
CLS
 INPUT "Enter a number"; N
CALL PC$ (N)
END
SUB PC$ (N)
 FOR I=2 TO N-1
 R=N MOD I
 IF C=0 THEN
PRINT "Prime number"
 ELSE
PRINT "Composite number"
 ENDIF
END SUB
```

a. What is the name of sub procedure?

The name of the sub procedure is PC$( )

b. List the local variable.

The local variable are N, I, R, C

3. 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 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

4. Read the following program and answer the given questions.

```
DECLARE FUNCTION FACT( N )
CLS
INPUT "Enter no"; N
```

```
PRINT "Factorial is"; FACT (N)
END
FUNCTION FACT (N)
F = 1
FOR X = 1 TO N
F = F * X
Next X
FACT = F
END FUNCTION
```

Questions:

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

The name of function procedure used in the above program is FACT ( ).

b) What is the main objective of the above program?

The main objective of the above program is to display the factorial of a given number.

5. 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.

6. 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.

The int() function **returns the numeric integer equivalent from a given expression**.

b) How many times the WHILE…..WEND LOOP repeats if the value of N is 123?

The WHILE…..WEND LOOP repeats 3 times if the value of N is 123

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

```
DECLARE FUNCTION count(bs)
INPUT a$
num=count (a$)
PRINT num
END

FUNCTION count (b$)
```

```
FOR K=1 to LEN (bs)
aS=MIDS(b$, K, 1)
IF UCASES(a$)="D" THEN
c=c+1
END IF
NEXT K
count = c
```

END FUNCTION

a) What is the name of FUNCTION procedure used in above program?
The name of FUNCTION procedure used in above program is count( ).

b) List out the formal and actual arguments from the
Formal parameter – b$, Actual parameter – a$

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

```
DECLARE SUB string(x$)
CLS
X$="COMPUTER"
CALL string(X$)
END

SUB string(x$)
 L=LEN(X$)
FOR A = L to 1 step -2
PRINT MID$(x$.A,1);
NEXT A
END SUB
```

Questions:

a) What is the value of L in the above program?
Ans: The value of L in the above program is 8.

b) List the numeric and string variable in the above program.
Ans: Numeric variable = L, A
String Variable = X$,

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

```
 DECLARE FUNCTION ABC$(N$)
CLS
INPUT "ENTER ANY WORD"; W$
PRINT "THE RESULT STRING IS"; ABC(W$)
END

FUNCTION ABC$ (N$)
FOR I=1 TO LEN (N$)
P$=MID$ (N$,I,1)
R$=P$+R$
NEXT I
SHARED R$
ABC$=R$
END FUNCTION
```

a) List the arguments and parameters used in above program
Ans: The argument used in the above program is W$ and parameter is N$.

b) What is the use of SHARED in above program?
Ans: The SHARED keyword in QBASIC is used to declare global variables in sub module

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

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

FUNCTION text$(N$)
FOR i=len (N$) TO 1 STEP-1
W$=W$+MID$(N$,i,1)
NEXT i
text$ = WS
NEXT Q

END FUNCTION
```

Questions:
a) What is the main objective of above program?
Ans: The main objective of above program is to reverse the string.
b) List all the parameters used in above program.
Ans: The parameters used in above program are X$ and N$

10. Study the following programs and answer the given questions. [2x1=2]

```
DECLARE SUB question (a, b, c)
CLS
x=10: y=20 : z=15
CALL question(x,y,z)
END
SUB question(a,b,c)
a = a +10
b = b + a
c = a + b
PRINT a,b,c
END SUB
```

a) What would be its output if x=1,y=2, z=3?
Ans: The output would be 11 13 24.
b) Write actual and formal parameters used in the program.
Ans: Actual parameters- x,y,z
Formal parameters-a,b,c

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

```
DECLARE FUNCTION TEST (A)
X = 10
Z = TEST (X)
PRINT Z
END
 FUNCTION TEST (B)
 FOR I = 1 TO B
 S = S + I * I
NEXT I
```

```
TEST= S
END FUNCTION.
```

Questions:

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

Ans. 1 parameter is used in the above program.

b) How many times does the statement S=S + I * I will be executed in the above program?

Ans. The statement S= S + I * I will be executed 10 times.

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

```
DECLARE FUNCTION A (X)
CLS
X = 5
Z = A(X)
PRINT Z
END
FUNCTION A (X)
FOR I = 1 TO X
S = S + I
NEXT I
A = S
END FUNCTION
```

a. If the line S=S+I is changed to S=S+I^2, find the output of it.

Ans:The output will be 55.

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

Ans: The statement S=S+I executes 5 times.

13. Study the following program and answer the given questions: (2×1=2)

```
DECLARE FUNCTION COUNT (NS)
INPUT "Enter a word"; RS
C=COUNT(RS)
PRINT C
END

FUNCTION COUNT(NS)
FOR K=1 TO LEN(NS)
XS=MIDS(NS,K,1)
IF UCASES(XS)="A" THEN
X=X+1
END IF
NEXT K
COUNT=X
END FUNCTION
```

Questions:

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

Ans: Two library functions used in above program are UCASE$( ) and MID$( )

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

Ans: The use of variable "C" in line 3 [i.e. C=COUNT(RS)] is to store the value returned by COUNT(RS) function.

14. Study the following program and answer the following questions: (2x 1=2)

```
DECLARE FUNCTION NUM(N)
INPUT N
S = NUM(N)
PRINT S
END
FUNCTION NUM(N)
X = INT(17/N)
```

```
Y =15 MOD N
NUM = X + Y
END FUNCTON
```

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

Ans: The name of function used in above program is NUM ( ).

ii. List the mathematical function used in above program.

Ans: The mathematical function used in above program is INT ( ).

15. Read the following program and answer the given questions.

```
 DECLARE SUB AA (N$)
W$=CYBERCRIME"
CALL AA(W$)
END
 SUB AA (N$)
R=LEN(N$) \ 2
E$=RIGHT$(N$,R) + LEFT$(N$,R)
PRINT E$
END SUB
```

Questions:

a) List the parameter(s) and argument(s) of the program.

Ans: The parameter used in above program is N$ and argument used in above program is W$.

b) List all the string library functions from the program.

Ans: The string library functions used from the program are LEN ( ), RIGHT$( ), LEFT$( ).

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

```
 DECLARE SUB FACTORS(N)
N=10
CALL FACTORS(N)
END
 SUB FACTORS(N)
FOR J=1 TO N
R=N MOD J
IF R=0 THEN PRINT J;
NEXT J
END SUB
```

Questions:

a) Write down the use of MOD in the program.

Ans: The use of MOD in the program is to determine the remainder of a division operation.

b) How many time the loop executes in the above program?

Ans: The loop executes 10 times in the above program.

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

```
DECLARE SUB TEST (A, B)
CLS
X= 7
Y = 5
CALL TEST (X, Y)
END

SUB TEST (A, B)
FOR I = A to B STEP -1
A = A+ B
B = B + A
NEXT I
END SUB
```

a. List the formal parameter and argument.

Ans: Formal parameters are A and B
Arguments are X and Y
b. Which loop is used in the above program?
Ans: FOR……NEXT loop is used in the above program.

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

```
DECLARE SUB TEST(A$)
CLS
A$= "COMPUTER"
END

SUB TEST (A$)
L= LEN(A$)
FOR I = L TO 1 STEP -2
PRINT MID$(A$, I, 1)
NEXT I
END SUB
```

a) What statement should be added in the main module to execute the program?
Ans: CALL TEST(A$) statement should be added in the main module to execute the program.

b) List out the variables used in the above program with types.
Ans: the variables used in the above program are:
A$ - String Variable
L, I – Numeric Variable

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

```
DECLARE SUB TEST (B$)
CLS
INPUT W$
CALL TEST(W$)
END

SUB TEST (B$)
FOR I=1 To LEN (B$)
PRINT RIGHT$(B$, i)
NEXT I
END SUB
```

a. Write the names of two built in functions used in the above program
Ans: The names of two built in functions used in the above program are LEN ( ) and RIGHT$ ( )

b. List the real parameters of the above program
Ans: The real parameters of the above program is W$

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

```
DECLARE FUNCTION MATH$(R)
CLS
DIM SHARED P
INPUT "Enter first number:"; P
INPUT "Enter second number:"; C
Y$ = MATH$(C)
PRINT Y$
END
```

```
FUNCTION MATH$(R)
F=100 MOD R
IF 20 MOD P > 3 AND F < P THEN
MATH$=”True”
ELSE
MATH$=”False”
END IF
END FUNCTION
```

a) Variable P remained uncalled in the main module. Why?
Ans: Variable P remained uncalled in the main module because P is declared as global variable and its value can be accessed by MATHS$ ( ) function without passing the value.

b) Find the output if the user supplies P=9 and c=4 running the program.
Ans: The output of the program if the user supplies P=9 and c=4 running the program is:
False

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

```
DECLARE FUNCTION OUTPUTS(W$)
CLS
W$="CYBER CRIME"
PRINT OUTPUT$ (W$)
END

FUNCTION OUTPUT$ (W$)
FOR M= LEN(W$) TO 1 STEP-2
M$=M$+MID$(W$, M, 1)
NEXT M
OUTPUT$=M$
END FUNCTION
```

a Why is $ sign is followed by function name?
Ans: The $ sign is followed by function name because the function returns string value.
b. List the library function used in the above program.
Ans: The library function used in the above program are LEN( ) and MID$( ).

22. Study the following program and answer the given questions: 2×1=2

```
DECLARE  SUB EXAMSEE (A$)
INPUT "Enter any string", B$
CALL EXAMSEE (B$)
END

SUB EXAMSEE(A$)
FOR I= LEN (A$) TO 1 STEP-1 PRINT LEFT$(A$,1)
NEXT I END SUB
```

a) Write the names of two built in functions used in the program.
Ans: The two built in functions used in the program are: LEN( ) and LEFT$( )
b) List the real parameter and formal parameter in the program.

Ans: The real parameter is B$ and formal parameter is A$