



SLC Brush-Up Exam – 2011

Answer Key

Round: #3 Set: A

Group 'A'- [Fundamentals - 22 marks]

1. Answer the following question:

(5×2=10)

- a) Who is network administrator? Write his/her responsibilities.
➤ Network administrator is a person who is used to setup network environment. He/she is responsible to install required hardware and software. He/she is also responsible to manage hardware, software, data and network users in the network environment.
- b) What is web browser? Name any two web browsers.
➤ A web browser is a software or program that is used to display the contents of web pages. It is used for surfing information and also allows user to retrieve, view and copy information through the Internet. The two web browsers are:
i) Internet Explorer
ii) Google Chrome
- c) Why power protection device is needed in computer system? Mention any two software security measures.
➤ The computer hardware is sensitive to electric voltage. It needs constant electric voltage. The frequent failure of electric power of fluctuation in electric voltage can damage hardware and corrupt files and operating system. So, a computer system should have a power protection device. The two software security measures are:
i) Password
ii) Backup
- d) What is cyber law? Why is it important?
➤ The law, which governs the legal issues related with the Internet and Cyber space for digital data processing and transaction is called cyber law. It was introduced in 2061 B.S.(2004). It includes a wide variety of legal issues related to the use of communication technology, such as the use of Internet as well as any other form of computer, digital processing and related devices.
Cyber law is very important because it controls cybercrimes and misuse of computer.
- e) List any four protective measures to safeguard your computer from virus.
➤ Four protective measures to safeguard your computer from viruses are:
i) Do not interchange the internal disks among the computers.
ii) Scan the mail or unknown files of Internet before opening.
iii) Do not use the free distributed software.
iv) Use good anti-virus program to scan the disks.

2. a) Perform the following Binary calculation:

(2×1=2)

- i) $(1011) + (1000) - (101)$
➤ (1110)
ii) $(1001 \times 101) \div (11)$
➤ (Quotient = 1111 Remainder = 0)

b) Perform as indicated:

- i) $(81)_{10}$ into Binary
➤ $(1010001)_2$
ii) $(453)_8$ into Hexadecimal
➤ $(12B)_{16}$

[Note: Students have to show the whole process to get full marks.]

(2×1=2)

3. Select the correct answer:

(4×0.5=2)

- a) Protocol to fetch the mail from the mail server is ----- .
i) FTP ii) **POP** iii) SMTP iv) ARP
- b) Which is the web browser?
i) Bing ii) Facebook iii) **Google Chrome** iv) Explorer
- c) Choose the odd one:
i) Hub ii) Switch iii) **Modem** iv) Router
- d) Two way communication simultaneously.
i) Half Simplex ii) Simplex iii) Half Duplex iv) **Duplex**

4. Write the full form of the following:

(4×0.5=2)

- a) NAC = Network Access Control
b) SMTP= Simple Mail Transfer Protocol
c) IETF = Internet Engineering Task Force
d) PDF = Portable Document Format

5. **State True or False:** (4×0.5=2)
- Router is a device that amplifies the incoming signals, creates a new copy of it and transmits the signals on the network. [False]
 - Pirated software copies viruses to the computer. [True]
 - The Internet is a network between different computers within a room. [False]
 - The digital signature allows the user to attach an original signature on the document of electronic records. [False]

6. **Give the appropriate technical terms of the following:** (4×0.5=2)
- Cabling structure of LAN. **Network Topology**
 - The legal issued adopted by the government to minimize the computer crime. **Cyber Law**
 - The sharpness of the image on the monitor screen, determined by the number of pixels that make up the image. **Graphic**
 - A software program with the ability to reproduce itself. **Virus**

Group 'B' - [Database Management - 10 Marks]

7. **Answer the following question:** (3×2=6)
- Define database. List any two purposes of database.
 - A collection of data stored in a standardized format, designed to be processed, shared by different users. A database may have single table or multiple tables. The data in a database are organized in rows and columns.
 - Purposes of database:
 - Easy to maintain/management
 - Quick and easy search and retrieval
 - List any two major differences between forms and reports.
 - A form is a type of a database object that is primarily used to enter or display data in a database whereas Report is an object of database, which can be an effective way to present your data in a printed format.
 - What is query? List the different types of query.
 - A query is search or question that we make for a record or an item. Queries help to investigate about data records.
 - Types of query:
 - Action query: An action query is a query that makes changes to or moves many records in just one operation. There are four types of action queries: Delete, Append, Update and Make-Table.
 - Select query: A select query retrieves information that you want from one or more tables in a database.

8. **Give the appropriate technical terms of the following:** (4×0.5=2)
- Helps in maintaining the centralized control over database. **DBMS**
 - Simplifies data entry by controlling what data is required in a field and how the data is to be displayed. **Format**
 - Enables you to limit values that can be accepted into a field. **Validation Rule**
 - A field or a group of fields that uniquely identifies the records in database. **Primary Key**

9. **Match the following:** (4×0.5=2)
- | ➤ <u>Group A</u> | | <u>Group B</u> | |
|------------------|-------|---|--|
| a) Action Query | (i) | Update/changes to multiple records in one operation | |
| b) Record | (ii) | Set of information stored about a particular entity | |
| c) Design View | (iii) | Access mode used to modify the structure of a table | |
| d) Table | (iv) | The basic structure of relational database | |

Group 'C' - [Programming - 18 Marks]

10. a) Differentiate between **AND** and **OR** operators. (1)
- The AND operator produces a logic 1(true) as its output only when all of the inputs are true whereas the OR operator produces a logic 1(true) as its output when if any one of the input is true.
- b) Differentiate between **C** and **QBASIC** programming language. (1)
- C can also be used for system programming whereas QBASIC is used for general programming. C has very few set of keywords (only 32) whereas QBASIC has more than C.
11. Write down the function of the following statements: (2×0.5=1)
- OPEN** – This statement is used to open a file in QBASIC.
E.g. OPEN "info.txt" FOR OUTPUT as #1
 - CALL** – This statement is used to call a sub-programme in QBASIC.
E.g. CALL SI (p, t, r)

12. **Write the output of the following program.** (2)
- ```
CLS
FOR i = 2 TO 10 STEP 2
 FOR j = i TO 10 STEP 2
 PRINT j;
 NEXT j
PRINT
NEXT i
END
```

➤ The output of the above program is:

```
2 4 6 8 10
4 6 8 10
6 8 10
8 10
10
```

[Note: The memory table should be shown to obtain full marks.]

13. Re-write the given program after correcting the bugs.

(2)

REM to convert Decimal number into Binary number

DECLARE FUNCTION dec (x)

CLS

INPUT "Any binary number :"; n

PRINT "Decimal Equivalent "; dec(n)

END

=====

FUNCTION dec (n)

p = 1

WHILE n <> 0

    r = n MOD 10

    s = s + r \* 10 ^ p

    p = p + 1

    n = n / 10

WEND

s=dec

END FUNCTION

➤ REM to display the Decimal equivalent of a supplied Binary number

DECLARE FUNCTION dec (x)

CLS

INPUT "Any binary number :"; n

PRINT "Decimal Equivalent "; dec(n)

END

=====

FUNCTION dec (n)

p = 0

WHILE n <> 0

    r = n MOD 10

    s = s + r \* 2 ^ p

    p = p + 1

    n = n \ 10

WEND

dec = s

END FUNCTION

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

(2×1=2)

DECLARE FUNCTION show (a, b)

CLS

a = 7: b = 25

PRINT show(a, b)

END

=====

FUNCTION show (a, b)

c = a \ b

d = b \* c

x = a - d

show = x

END FUNCTION

a) What is the main objective of the above program? Give output.

➤ The main objective of the above program is to find out the remainder when the first parameter is divided by the second parameter of the function show(a,b).

Output : 7

b) Re-write the same program using **SUB-END SUB** statement.

```
> DECLARE SUB show (a, b)
CLS
a = 7: b = 25
CALL show(a, b)
END
=====
SUB show (a, b)
c = a \ b
d = b * c
x = a - d
PRINT x
END SUB
```

15. a) Write a program that asks any number and calculates its factors using a **SUB** procedure. (3)

```
> DECLARE FUNCTION fact (n)
CLS
INPUT "Type any number "; n
PRINT "Factorial = "; fact(n)
END
=====
FUNCTION fact (x)
f = 1
FOR i = 1 TO x
 f = f * i
NEXT i
fact = f
END FUNCTION
```

b) Write a program that asks any string value and counts the frequency of vowels present in the supplied string using a **FUNCTION** procedure. (3)

```
> DECLARE FUNCTION vowel (n$)
CLS
INPUT "Type any string "; s$
PRINT "Frequency of Vowels = "; vowel(s$)
END
=====
FUNCTION vowel (n$)
FOR i = 1 TO LEN(n$)
 b$ = MID$(n$, i, 1)
 c$ = UCASE$(b$)
 IF c$ = "A" OR c$ = "E" OR c$ = "I" OR c$ = "O" OR c$ = "U" THEN x = x + 1
NEXT i
vowel = x
END FUNCTION
```

c) Write a program that asks your name and stores its reverse form into a sequential data file "**REVERSE.DAT**". Make a provision so that user can input 5 records at each program execution. (3)

```
> DECLARE FUNCTION rev$ (n$)
OPEN "reverse.dat" FOR OUTPUT AS #1
CLS
FOR i = 1 TO 5
 INPUT "Type any name "; n$
 WRITE #1, rev$(n$)
NEXT i
CLOSE #1
END
=====
FUNCTION rev$ (x$)
FOR i = LEN(x$) TO 1 STEP -1
 b$ = b$ + MID$(x$, i, 1)
NEXT i
rev$ = b$
END FUNCTION
```

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