



## General Certificate of Education (Adv. Level) Support Seminar - 2012

Sample Paper :- Information & Communication Technology II

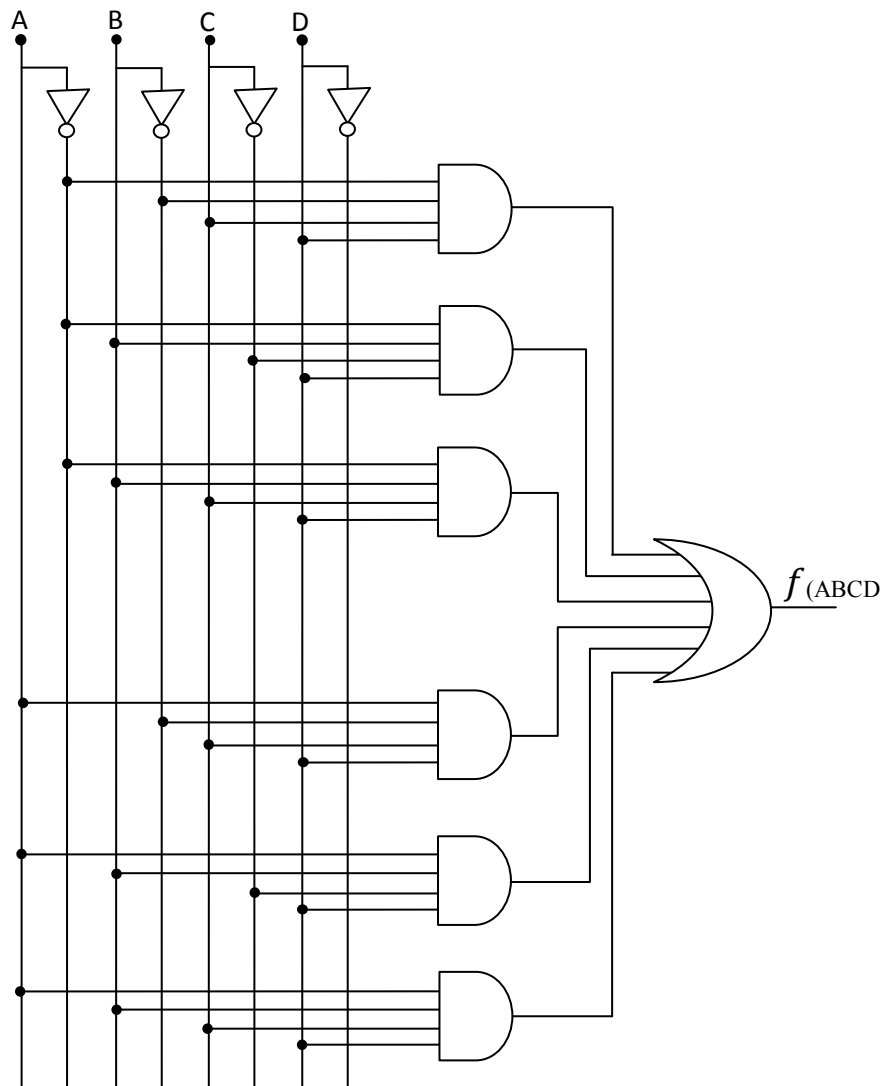
Preparation :- Ministry of Education

Instructions:

❖ Answer any four questions only.

### Part - B

- (1) (a). Computer memory is classified as volatile and non volatile. Name three basic volatile memories.  
List the functions of each of those three volatile memories.
- (b). Calculate the wastage in file space due to incomplete filling of the last cluster for a file of size 25200 bits (Assume that a cluster has a size of 512 bytes.)
- (c). Answer the following questions considering the following logic circuit.



- (i) Draw the truth table considering for every AND gate that output is 1.
- (ii) Write down the Boolean expression for the output of the above circuit using a truth table.
- (iii) Simplify the above expression using Boolean algebra or Karnaugh (K-Map).
- (iv) Design the logic circuit for the answer you have obtained in above (iii).
- (v) Convert the Boolean expression you obtained for the above part (ii) to Product of Sum (POS).

(2) (a). Compare the following protocols .

- (i) File Transfer Protocol (FTP)
- (ii) Hyper Text Transfer Protocol (HTTP)

(b). Describe the process of the following devices.

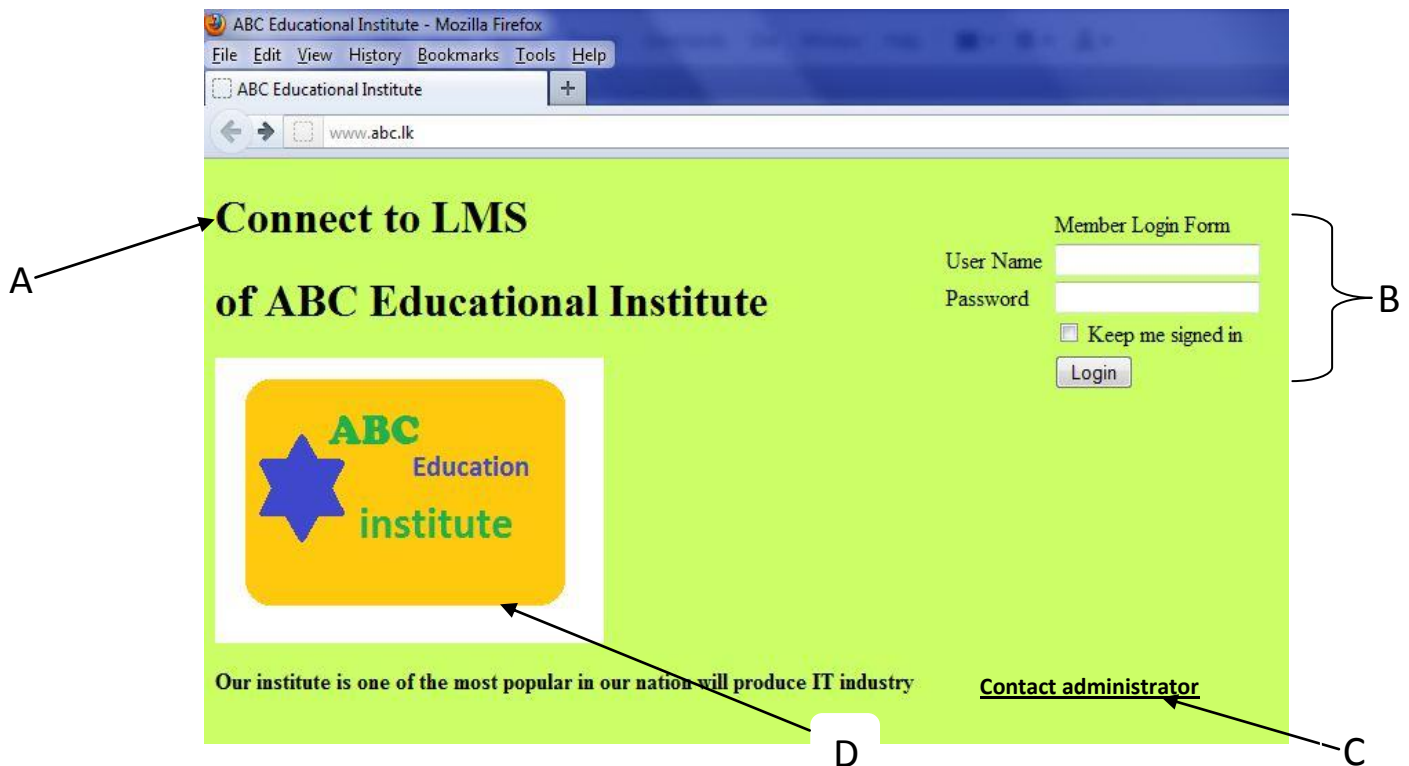
- (i) Repeater
- (ii) Bridge

(c). What is the main advantage of using classless IP address rather than classfull IP address?

(d). An organization uses the following IP addresses. Write down the classes, network address, and subnet mask.

IP address	Subnet mask	Network address	Class
172.16.10.0/16			
10.10.10.0/10			
192.168.10.0/26			
190.100.100.10/19			

(3) Consider the following figure which shows a web page of Learning Management System of ABC Institute.



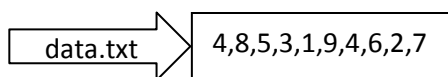
Answer the following questions using the above figure.

- (a). Above web site is designed using HTML and CSS is used to make it more attractive. Write down two advantages of using CSS.

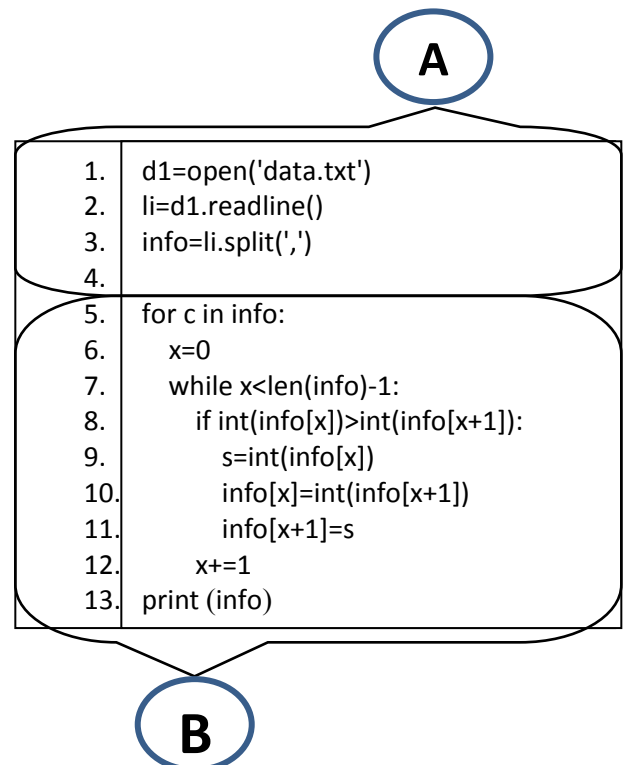
- (b). It is required to format the above paragraph **A** in “arial” font type, font size 16 and in red color. Write down the CSS code segment for it .
- (c). Write down the HTML code segment to create the above member login form B.
- (d). Write down the HTML code segment to insert the image **D** to the web page (Assume that above image “abc.jpg” is in the “images” sub folder of “myweb” folder).
- (e). When new members are added to the ABC Institute, you should click on “contact administrator” hyperlink to access admin .html page. Write down the HTML code segment to create this hyperlink.
- (4) (a). Some programming languages use both compiler and interpreter. First the source code is compiled into byte code and next it is interpreted in these languages. Explain the advantages of using both compiler and interpreter instead of using only compiler?
- (b). Identify the computer language generations which used to write Instruction Set Architecture (ISA) of Micro Processors and SQL. Describe two differences of these generations.
- (c).

```
d1=open('data.txt','r')
li=d1.readline()
info=li.split(',')
for c in info:
    x=0
    while x<len(info)-1:
        if int(info[x])>int(info[x+1]):
            s=int(info[x])
            info[x]=int(info[x+1])
            info[x+1]=s
        x+=1
    print( info)
```

- (i) Name flow control structures you noticed in this Python Program.
- (ii) Show how these flow control structures can be represented in a flow chart.
- (d). Python module which contains the following program is saved in the “mypro” folder as “dataAsc.py”. This folder contains “data.txt” file too.



- (i) This program is divided into A and B for the purpose of understanding. Describe the function of **A**.
- (ii) The process in B is a “selection” technique. How do you name it ?
- (iii) Explain the process shown in B.
- (iv) Write down the output of this program after execution.



- (5) (a) Compare the difference between White box testing and Black box testing.
- (b). ABC institution is intended to convert its business into computer based system. Briefly explain the system analyst's role in terms of the stages of System Development life cycle.
- (c). List two advantages of using spiral model rather than waterfall model for the above.
- (d). In system analysis, Data Flow Diagram (DFD) is a system analysis tool used by the system analyst. What are the two facts represented in this diagram?.
- (e). The owner of the business has said that parallel implementation is more suitable way to install a new computer based information system. Briefly explain two reasons to support his statement.
- (6) (a). Explain the difference between e - business and e - commerce.
- (b) Explain following business organizations with examples for each of them.
- Pure brick
  - Brick and Click
  - Pure Click
- (c). Imagine that the government has decided to provide service (G2C) to the citizens through e-business only. Explain two advantages and two disadvantages of it.
- (d). Write down four uses of emotional computers.
- (e). What is the basic difference between Von Neumann and Quantum models.  
For what purpose Quantum computers are used?