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NVQ Level 05 - Semester II		
Information and Communication Technology		
Local Area Network (Theory)	K72C001M08	Three Hours
* Answer any five (05) questions		

Question 01

(a) State four advantages of LAN system rather than use of stand along computers.

(Marks -04)

(b) Currently ABC college is using two separate LAN network for their day to day works. One is used for administration of the college and other one for LMS system. Assume Both LAN systems are used Bus topology. Administrator LAN consist 15 workstations and dedicated **file server**. One of the workstation acts as a printer **server** too.

Draw a diagram to explain the above scenarios and describe file server and printer server

(Marks -08)

(c) Describe **Ring** and **Star** topologies using diagram

(Marks -04)

(d) Compare and contrast Bus Topologies vs Star Topologies

(Marks -04)

Question 02

You are requested to implement network system for a private company which is inside two store building. This company hopes to install 20 computers first floor and 15 computers for second floor according to available staffs. First floor has a small room which can be used for servers. Company needs two server called DNS and Proxy system to manage these two floors separately.

- (a) List all the steps that you are going to follow to implement this network steps according to the customer requirements **(Marks-04)**
- (b) List all the equipment's and material require to implement this network system **(Marks-06)**
- (c) Draw a simple block diagram to illustrate this network system **(Marks-04)**
- (d) Name two software applications which can be used to draw network diagram. **(Marks-02)**
- (e) Describe briefly **DNS server** and **Proxy Server** **(Marks-04)**

Question 03

- (1) Name the following devices use in network **(Marks -04)**



(a)



(b)



(c)



(d)

- (ii) Write four **(4)** differences between Network **HUB** and Network **Switch** **(Marks -04)**
- (iii) Write four **(4)** differences between Twisted pair cables and Fiber optic Cables **(Marks -04)**
- (iv) Name two **(2)** network standards use for network medias **(Marks -02)**
- (v) Write short notes on following in respect with transmission and signals
 - (a) Signal Noises (b) Attenuations (c) signal interferences **(Marks -06)**

Question 04

One of network diagram include this **192.168.10.65/28** IP address style. Answer the following question base on this IP style

- (i) Write a meaning of **192.168.10.65/28** **(Marks -02)**
- (ii) What is a subnet Mask IP belong to this IP style **(Marks -04)**



- (iii) Write a Net ID of 192.168.10.65/28 IP style (Marks -04)
(iv) What is Number of host support for this IP style (Marks -04)
(v) Write support IP address range for this IP style (Marks -06)

Question 05

OSI and TCT/IP is the basic layer models have been introduced to network data communication.

- a. Draw a diagram to show OSI and TCT/IP layer models (05 marks)
b. Write four (4) advantages of OSI layers. (04 marks)
c. Describe 2nd and 4th layers of OSI Models (05 marks)
d. Write short note on
 i. Flow control
 ii. Data encapsulation (06 marks)

Question 06

- (A) (i) **Ping** is a network command use for network trouble shooting. Write a purpose of Command (04 marks)
(ii) The following picture show the result of **ping** command use in command prompt screen

```
C:\WINDOWS\system32\cmd.exe

C:\WINDOWS\system32>ping www.howtogeek.com

Pinging howtogeek.map.fastly.net [151.101.206.15] with 32 bytes of data:
Reply from 151.101.206.15: bytes=32 time=17ms TTL=56
Reply from 151.101.206.15: bytes=32 time=22ms TTL=56
Reply from 151.101.206.15: bytes=32 time=14ms TTL=56
Reply from 151.101.206.15: bytes=32 time=14ms TTL=56

Ping statistics for 151.101.206.15:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 14ms, Maximum = 22ms, Average = 16ms

C:\WINDOWS\system32>
```

What is meaning by **time** mention in above picture (04 marks)



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- iii) Explain what actually ping command does regarding the above picture
(04 marks)
- (iv) Write differences between Ipconfig and Ipconfig */all* commands
(04 marks)
- (B) (i) Write two examples for network operating system (02 marks)
(ii) Describe network OS compared with stand alone OS (02 marks)