F.Y. M.C.A CN ESE Synoptic

1 A. **Compare Shannon and Nyquist Theorem with help of an example CO 1 10m**

Definition Shannon and formula [2m]

Definition Nyquist and formula[2m]

Exam Sum solving [6m]

1 B. **Illustrate various transmission impairments [10m] CO 1**

List transmission impairments [2m]

Explanation of transmission impairments [8m]

2A .**List different types of Email protocol and explain in brief any one [10m] CO3.**

SMTP ,POP3,MIME ,IMAP [2mk]

Explanation [8m]

2B. **Explain four way handshake protocol [10m] CO 3**

Diagram [4m]

Explanation [6m]

3 A. **A block of addresses is granted to a small organization. We know that one of the addresses is 205.16.37.39/28. [10m] CO3**

1. What is the first and the last address in the block
2. Find the number of addresses?

Solution The binary representation of the given address is

11001101 00010000 00100101 00100111

If we set 32−28 = 4 rightmost bits to 0, we get 11001101 00010000 00100101 00100000 205.16.37.32

If we set 32−28 = 4 rightmost bits to 1, we get 11001101 00010000 00100101 00101111

The number of addresses is $2^{32-28} = 16$

3 A Summarize the use of IGMP CO 3 10 m

IGMP explanation [2m]

Diagrammatic explanation for group management process [8m]

3 B Demonstrate the working of open shortest path first with an example CO 4

open shortest path first explanation [2m]

Numerical solution [8m]

OR

3B Demonstrate the working of spanning-tree with an example. CO4

Spanning tree explanation [2m]

Numerical solution [8m]

4 A.Outline the structure of TCP segment and UDP segment 10m CO3

Segment structure of TCP [6m]

Segment structure of UDP [4m]

4 B Interpret the different ways of translating IPv4 to IPv6 10 m CO 3

List methods : tunneling , dual stack, encryption [1m]

Each method to be explained []3 mk each

5 A Illustrate the working of Stop n Wait ARQ protocol 10 m CO 3

Explanation with diagrammatic example 10m

A Illustrate the working of Go n Back ARQ protocol 10 m CO 3

Explanation with diagrammatic example 10m

5 B Explain any two different wired media CO 2

Twisted pair , coaxial cable, optical fiber diagram and explanation [5 mark for each]

B Explain any two different wireless media CO 2

Microwave, radiowave , infrared diagram and explanation [5 mark for each]