WEST BENGAL STATE UNIVERSITY

B.Sc. Honours 6th Semester Examination, 2021

ELSADSE05T-ELECTRONICS (DSE3/4)

COMPUTER NETWORKS

Time Allotted: 2 Hours   Full Marks: 40

The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.

GROUP-A

1. Answer any *five* questions from the following: 2×5=10

    (a) What are the principles behind layered OSI architecture proposed by ISO?

    (b) What is the advantage of digital transmission over analog transmission?

    (c) What is user agent in e-mail system?

    (d) State two advantages of using mesh topology.

    (e) What is biphase encoding?

    (f) What is MIME?

    (g) The power of a signal is 280 mW and the power of the noise is 4 μW. What are the values of SNR and SNR_{dB}?

    (h) What is the functionality of firewall?

GROUP-B

Answer any *six* questions from the following   5×6=30

2. (a) Define Channel Capacity.   1
    (b) State Nyquist theorem. How is it related to Channel Capacity?   2+2

3. (a) Compare and Contrast in between Amplitude Modulation and Frequency Modulation   3
    with appropriate example.
    (b) What are the different types of transmission impairments?   2

4. (a) Why is the data link in a LAN subdivided into Logical Link Control (LLC) and   3
    Medium Access Control (MAC) sub layers?
    (b) What is the basic purpose of MAC layer protocol?   2

5. (a) What are TCP and UDP?   2
    (b) What do you mean by URL? How does a URL differ from a Domain Name?   1+2

6. What are the advantages and disadvantages of using fibre optic cable? What do you mean by unguided transmission media? Give some examples of it. 3+2

7. What is the function of a MODEM? What is meant by flow control? Name any two flow control techniques and state how they differ. 2+1+2

8. Write short notes on FDDI based LAN. 5

9. What is the purpose of an NIC? Why is there no need for CSMA/CD on a full-duplex Ethernet LAN? Compare the data rates for Standard Ethernet, Fast Ethernet, Gigabit Ethernet and Ten-Gigabit Ethernet. 1+2+2

10. Describe the Stop-and-Wait protocol with flow diagram. 5

11. What is www? How is HTTP related to WWW? What is a proxy server and how is it related to HTTP? 1+2+2

N.B. : *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within* 1 *hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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