WEST BENGAL STATE UNIVERSITY

B.Sc. Honours 3rd Semester Examination, 2020, held in 2021

CMSACOR07T-COMPUTER SCIENCE (CC7)

COMPUTER NETWORKS

Time Allotted: 2 Hours   Full Marks: 40

The figures in the margin indicate full marks.
Candidates should answer in their own words as far as practicable
All symbols are of usual significance.

Answer Question No. 1 and any *four* from the rest

1.   Answer any *four* questions: 2×4 = 8

   (a) Mention the names of three widely used guided media in transmission mechanism.

   (b) What are the full form of PSK and PSM?

   (c) Differentiate between internal modem and external modem.

   (d) What are the full form of WNS, DNS and https?

   (e) Why Half Duplex Communication is used?

   (f) What is the purpose of a guard band?

   (g) What is the relevance of 'three way handshake' is used in Transport Layer function and protocol?

2. (a) What is Network Topology?   2+6

   (b) There are *N* devices, to be connected through a network. How many distinct cable links would be required if the following topology is followed?

   (i) Mesh, (ii) Ring, (iii) Bus.

3. (a) State and explain Nyquist Formula.   2+2+4

   (b) Determine the maximum (theoretical) limit of bit rate (in bits per second), in a noiseless channel, of a Bandwith of 5000 Hz transmitting 64 levels.

   (c) State and explain the Basic Service Set (BSS) for Wireless LAN as provided in IEEE 802.11 specification.

4.   Compare and contrast in between the following error recovery protocols. 2+2+4

   (a) Stop and Wait ARQ (Automatic Repeat Request)

   (b) Go Back n ARQ

   (c) How many bytes of data can be sent in 15 seconds over a serial link with baud rate of 96000 in asynchronous mode with odd parity and two stop bits in the frame?

5. What is port address, logical address and physical address? A composite signal contains frequencies from 10 to 30 KHz, each with amplitude of 10V. Draw the Frequency spectrum. What does a decibel measure? 3+3+2

6. (a) Compare and contrast in between Amplitude Modulation and Frequency Modulation with appropriate example. 5+3

   (b) Why TCP is said to be reliable and connection oriented protocol?

7. (a) What is routing? 2+6

   (b) Compare and contrast in between *Non Adaptive Routing Algorithm* and *Adaptive Routing Algorithm*.

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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