BACHELOR OF COMPUTER APPLICATIONS (BCA) (Revised)

Term-End Examination

June, 2021

BCS-041 :　FUNDAMENTALS OF COMPUTER NETWORKS

Time : 3 hours　　　　　　　　　*Maximum Marks : 100*

*Note :　Question no. **1** is **compulsory**. Attempt any **three** questions from the rest. Use of calculator is allowed.*

1.　(a)　Which type of communication, digital or analog, is better for computers ? Justify your answer.　　*5*

　　(b)　What are 'Hash functions' ? Why are they called 'One-way functions' ? Explain.　　*5*

　　(c)　Compare SVC and PVC of X·25 architecture.　　*5*

　　(d)　Why is serial data transmission faster than parallel data transmission ? Explain.　　*5*

(e) How are the number of twists in the UTP cable related to its performance ? *5*

(f) Name the two sublayers of Data Link Layer, and explain the characteristics of these layers. *5*

(g) Explain Silly Window Syndrome, with the help of a diagram. *5*

(h) Briefly discuss the problem with PSK and explain its possible solution. *5*

2. (a) Compare and contrast the amplitude modulation and phase modulation techniques. Discuss the limitations of each. *10*

(b) Explain RSA algorithm with example. *10*

3. (a) Explain the working of 3-way handshake used in TCP, using a suitable diagram. *10*

(b) Discuss the ATM service classes and QoS (Quality of Services) parameters of each class. *10*

4. (a) Calculate the CRC for a 10 bit sequence 1010011110 with a divisor of 1011.
Note : Show all steps and calculations. *10*

(b) Compare Time Division Multiplexing (TDM) and Frequency Division Multiplexing (FDM). Give the advantage and disadvantage (if any) of both TDM and FDM. *10*

5. Write short notes on the following : *4×5=20*

    (a) CSMA/CD

    (b) IEEE 802·3

    (c) Frame Relay

    (d) OSI Model

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