

**BACHELOR OF COMPUTER
APPLICATION (BCA) (Revised)**

Term-End Examination

**BCS-041 : FUNDAMENTALS OF COMPUTER
NETWORKS**

Time : 3 Hours]

[Maximum : Marks : 100

Note: Question number 1 is compulsory. Answer any three questions from the rest. Use of calculator is allowed.

1. (a) Compare Analog and Digital communication systems. Give example of each. 5
- (b) What is frequency modulation? Give two advantages and two disadvantages of frequency modulation. 5
- (c) What is multiplexing? Briefly discuss the importance of multiplexing. List the basic multiplexing techniques. 5
- (d) Differentiate between OSI and TCP/IP model. 5

- (e) Discuss the role of switch as a inter networking king device. Compare layer 2 switch with layer 3 switch. 5
 - (f) Compare circuit switching with virtual circuit and Datagram. 5
 - (g) What is Block Cipher? Give two advantages and two disadvantages of Block Cipher. 5
 - (h) Explain Data Encryption Standard (DBS) with suitable example. 5
- 2.
- (a) Discuss OSI reference model with suitable block diagram. Briefly discuss the function of each layer in OSI reference model. 10
 - (b) Explain the following Digital modulation techniques: 6
 - (i) Amplitude Shift Keying
 - (ii) Frequency Shift Keying
 - (iii) Phase Shift keying
 - (c) Compare synchronous and Asynchronous transmission. Give advantage and disadvantage of both. 4

3. (a) Draw block diagram to show the classification of Medium access control techniques. 5
- (b) What is Address Resolution Protocol (ARP)? Discuss the working of ARP with a suitable block diagram. 5
- (c) What is the function of Datalink Layer? Briefly discuss the role of two sublayers of Datalink layer. 5
- (d) What do 10 base T and 100 Base T stand for? Also differentiate between the two. 5
4. (a) Compare Adaptive Routing algorithms with Non-Adaptive Routing algorithms. 5
- (b) Discuss the leaky bucket algorithm. Give its advantages and disadvantages. 5
- (c) What is the need of data fragmentation? Compare Transparent fragmentation with Non-transparent fragmentation. 5
- (d) Explain silly window syndrome. Briefly discuss the solution to silly window syndrome. 5

5. Write short notes on following:

4×5=20

- (i) Frame Relay
- (ii) GSM architecture
- (iii) MD 5
- (iv) Cryptanalysis

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