

This question paper contains 4+1 printed pages]

Your Roll No.

8862

B.Sc. (Hons.) Computer Science/V Sem. C

Paper CS-502

COMPUTER NETWORKS

(Admissions of 2001 and onwards)

Time : 3 Hours

Maximum Marks : 75

(Write your Roll No. on the top immediately on receipt of this question paper.)

All questions in Section A are compulsory.

Attempt any four questions in Section B.

Section A (Compulsory)

1. (a) Draw the waveform of bit stream 100000000001100 using the following encoding schemes : 2+2

(i) B8ZS

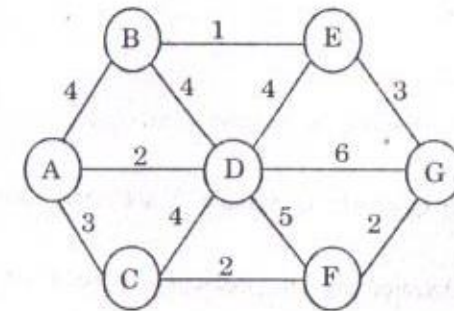
(ii) HDB3.

P.T.O.

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- (b) Evaluate the maximum bit rate for a channel having bandwidth 1600 Hz with S/N ratio is zero decibel. 3
- (c) List and explain the services provided by Broadband ISDN. 3
- (d) Find the shortest path from A to G for the following graph using Dijkstra's algorithm. 5



2. (a) If the frame is received by a receiver is 1100100101011, check whether there are errors in the same, given the generator as 10101. 3
- (b) What is the purpose of having a predefined minimum frame length for an Ethernet frame ? 3

- (c) Which layer(s) in OSI Model performs the following operations ? 4
- (i) Reassembling of data packets
- (ii) Route determination
- (iii) Mechanical, electrical and functional interface
- (iv) Error correction and retransmission.
3. (a) Explain the format of IP header with the help of a diagram. 5
- (b) Describe the *two* kinds of timers used by FDDI. 3
- (c) Write a short note on DNS. 2

Section B (Attempt any 4 questions)

4. (a) How is baud rate different from bit rate ? 2
- (b) Explain the *two* approaches to handle flow control in data link layer. 4
- (c) What are the *two* sublayers of ATM Adaptation layer ? Explain their functions. 2+2

P.T.O.

5. (a) Write a detailed note on AMPS. 4
- (b) Name and briefly describe any *four* Bluetooth applications. 4
- (c) What is the purpose of PSH and SYN flag bits with respect to TCP header ? 2
6. (a) A number inside an organization receives the same packet with a destination address 190.240.34.95. If the subnet mask is /19, find the subnet address. 3
- (b) Compare and contrast the virtual circuit subnet and datagram subnet. 5
- (c) How is handoff handled in D-AMPS ? 2
7. (a) Explain the TCP connection establishment process with the help of a diagram. 4
- (b) What are the different components of a URL ? Explain. 3
- (c) Explain how E-mail transfer takes place using SMTP. 3

8. (a) "To detect d errors you need a distance $d+1$ code and to correct d errors you need a distance $2d+1$ code." Explain the statement. 4
- (b) At what layer(s) do the following protocols operate in TCP/IP protocol ? 4
- (i) DNS
 - (ii) UDP
 - (iii) ARPANET
 - (iv) FTP.
- (c) Give short description of Point to Point Protocol. 2
9. (a) Define piggybacking ? What is the complication associated with it and how is it handled ? 3
- (b) Briefly explain various types of CSMA protocols. 3
- (c) Differentiate between the following : 2+2
- (i) Attenuation and distortion
 - (ii) Services and protocols.