

Vidya Vikas Mandal's
Shree Damodar College of Commerce & Economics, Margao-Goa
S.Y. B. C. A., Semester IV, End Semester Examination, April 2018
COMPUTER NETWORKS (BCA 402)

Duration: 02 Hours

Total Marks: 50

- Instructions:** 1) All questions are compulsory
2) Figures to the right indicate Full Marks
3) Start each new question on fresh page

Q.1. Answer the following **10 Marks**

A) Define the following terms 5 x 1 = 5

- i) Forwarding ii) Bit Stuffing iii) Half-duplex iv) Jitter v) Bandwidth

B) Answer the following in one or two statements. 5 x 1 = 5

- i. How many links does 8 devices/computers in mesh network topology has?
- ii. Mention any 2 devices which are used at physical layer.
- iii. Draw the frame structure of Information frames (I-frames) of HDLC Protocol.
- iv. Change the IPv4 addresses 111.56.45.78 from dotted-decimal notation to hexadecimal notation
- v. Mention the role of Application layer in data communication.

Q.2 Answer the following **10 Marks**

A) Use Manchester encoding to represent the signal for the data bit 0100110100. 02

B) Explain, how Star topology is better than Ring topology? 03

C) Give five points of differences between Fiber Optics Cable and Copper Cable. 05

Q.3 Answer the following **10 Marks**

A) Define burst error. Find out the CRC generator from the generator polynomial $x^4 + x + 1$. 02

B) Find the hamming codeword for the dataword 1101101. 03

C) Explain Go-Back-N ARQ Protocol of Data Link Layer. 05

P. T. O.

- Q.4 Answer the following** **10 Marks**
- A) Mention any 4 functions of Network layer. 02
 - B) Explain the functionality of ARP in Network layer. 03
 - C) An organization is granted the block 130.56.0.0/16. The administrator wants to create 1024 subnets. 05
 - i). Find the subnet mask.
 - ii). Find the number of addresses in each subnet.
 - iii). Find the first and last addresses in subnet 1.
 - iv). Find the first and last addresses in subnet 1024

- Q.5. Answer the following** **10 Marks**
- A) Explain cryptography. Mention 2 types of cryptography used. 02
 - B) What is domain name? Mention its features. 03
 - C) What are the 2 most common Transport layer protocols of TCP/IP protocol suite? Explain them. 05
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