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Shree Damodar College of Commerce & Economics, Margao-Goa  
SY BCA Semester-IV, Supplementary Examination June 2023  
Data Communications (CAC-114)

Duration: 2 Hours

Max Marks: 60

Instructions: i) All Questions are compulsory.  
ii) Figures to the right indicate full marks.

**Q1.A) State TRUE or FALSE.**

(5x1=05)

- i) TCP Transmits data in Full Duplex Mode
- ii) Traceroute calculates the time taken by echo reply requests based on the response from the network address of the server.
- iii) Standards that have not been approved by an organized body but have been adopted as standards through widespread use are known as De-jure.
- vi) FTP is a standard internet protocol used for transmitting the files from one computer to another computer.
- v) HTTP is a Transport Layer Protocol.

**Q1.B) Define the purpose of the following in not more than 20 words.**

(5x1=05)

- i) Firewall.
- ii) Web Browser.
- iii) Distortion.
- vi) Network Address Translation.
- v) Piggybacking.

**Q.2) Answer the following.**

- a) Convert '0100110100' into digital signal using Manchester line coding technique. (2)
- b) Explain the working of a Search Engine. (3)
- c) Describe any five responsibilities of the Physical Layer. (5)

**Q3) Answer the following.**

- a) Describe any four advantages of Bridges. (2)
- b) Explain the three elements of a Protocol. (3)
- c) Explain the TCP Header Format with a neat diagram. (5)

**Q4) Answer the following.**

- a) Explain any two components of Data Communication. (2)
- b) Describe Subnetting and list its advantages and disadvantages. (3)
- c) Explain the SSL handshake protocol with a neat diagram. (5)

**Q5) Answer the following.**

- a) Explain the two responsibilities of Session Layer. (2)
- b) Given the following IP address, Calculate the first address in the block. (3)
  - 205.16.37.39/28
- c) Explain with a neat diagram the TCP Connection establishment using three way handshake protocol. (5)

**Q6) Answer the following.**

- a) Explain Point-to-Point and Multipoint connection. (2)
- b) Explain any three error reporting messages in ICMP. (3)
- c) Illustrate with diagrams the various wireless propagation methods used in data communication. (5)

----- ALL THE BEST -----