B.C.A. CBCS (SEMESTER- IV) END EXAMINATION APRIL/MAY 2023

DATA COMMUNICATIONS

Duration: 2 Hours   **Marks: 60**

Q.1. A) Fill in the Blanks: **(5x1=05)**

    a) The client program defines itself with _____ port number, chosen randomly by the transport layer software running on the client host.

    b) A _____ is a network security device that establishes a barrier between secured internal networks and outside untrusted network.

    c) _____ is issued by a trusted third party which proves sender's identity to the receiver and vice versa.

    d) HTTPS operates at _____Layer.

    e) _____ is accessible to members of organization as well as external members with logins and its restricted area is up to an organization and some of its stakeholders.

B) Define the following: **(5x1=05)**

    a) Standards in Data Communication.

    b) Socket Address.

    c) Cryptography.

    d) DNS.

    e) World Wide Web.

Q.2. Answer the following:

A) Explain in brief the types of data flow in Data Communications.   **(02)**

B) Explain the responsibilities of Data Link Layer.   **(03)**

C) Write a short note on Mesh and Star network topologies.   **(05)**

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Q.3. Answer the following:

A) Differentiate between Baseband and Broadband Transmission. **(02)**

B) State the two types of Polar NRZ encoding scheme. Encode the signal 01001110 in

   both the NRZ encoding types. Mention the conditions assumed. **(03)**

C) With the help of a neat diagram, explain Logical Addressing. **(05)**

Q.4. Answer the following:

A) Explain in brief the working of Address Resolution protocol. **(02)**

B) Write a short note on Network Address Translation. **(03)**

C) Write a short note on Router and Gateway. **(05)**

Q.5. Answer the following:

A) Explain in brief any two responsibilities of Transport Layer. **(02)**

B) Explain in brief the User Datagram Protocol. **(03)**

C) Draw a neat diagram for IPV4 Header and explain the fields. **(05)**

Q.6. Answer the following:

A) What are the responsibilities of a network administrator? **(02)**

B) State and Explain the steps in the process of Ethical Hacking. **(03)**

C) With the help of a neat diagram, explain the connection establishment phase for TCP. **(05)**

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