Unique Paper Code   :   **62344330**

Name of the Course   :   **B.A. Prog.**

Title of the Paper   :   **Computer Networks and HTML**

Semester   :   **III**

Duration of Examination: **3 Hours**

Maximum Marks   :   **75**

Year of Admission   :   **2019**

Instructions for Candidates:

i.   **Attempt any four out of six questions.**

ii.   **Each Question carries equal marks.**

Q1. Why do we divide the task of data communication into different protocol layers? Which layer of TCP/IP reference model does end to end connection and which layer does the routing? Also state, which layer of the TCP/IP model does the error recovery and framing and which layer does bit by bit data transmission. What are the data objects that are exchanged at Transport layer and Application layer?

Q2. If there is no Domain Name System (*DNS*), what problems will you face in accessing a web page? If you reach a web page whose contents do not change, what type of web page will it be? Give an example of a *URL*, identify and describe the purpose of its different parts.

Write an *HTML* program using *lists* to design the following web page:

Means of Transport

1. Land Transport
   - Bus
   - Car
   - Truck
2. Air Transport
   - Helicopter
   - Airbus
3. Water Transport
   - Ship
   - Boat

Q3. During data transmission, what is the technical term associated with the weakening of a signal after travelling some distance, and which device is used to handle this problem? Why do we twist wires in a twisted pair cable, and what is the effect of increasing or decreasing the number of twists in a twisted pair cable? What do you think could be the reasons behind increased use of fiber-optic cables in data transmission?

Write *HTML* code to design the following table:

Column 1	Column 2	Column 3
Cell 1	Two column cell 2	
Two row cell 3	Cell 4	Cell 5
	Cell 5	Cell 6

Q4. Suppose you have a data communication channel where data flows from sender to receiver as well from receiver to sender in parallel, what is this type of data communication channel called? In which type of data communication, there is one sender and the message is received by multiple devices? How do you measure the *reliability* of a communication link? Describe the two main problems, if you do not implement any *security* measures in a computer network. For connecting 40 computer systems in a computer laboratory, which topology do you think would be most useful, and why?

Q5. How does the behaviour of radio waves change as we move from lower to higher frequency? What is the height of the orbit of a geo-stationary satellite? Why is more than one geo-stationary satellite needed for covering the entire globe? In a situation, where you have to transmit in an area covering few hundred square kilometres, which transmission mode among either satellites or fiber-optic cables would be more preferable, and why?

Write *HTML* code to design an *HTML form* of an employee that takes employee code and employee name as input, allows to choose only one option from the three different options with respect to the number of hours worked (like 6, 8 or 10 hours) and allows the employee to select one or more hobbies.

Q6. Which among a *repeater* and a *switch* is a more intelligent device, and why? Elaborate on the utility of video conferencing by using an example. Describe the purpose of a *ping* command by using an example.

Write an *HTML* code to design a web page using *hyperlinks* containing the following topics: chapter 1, chapter 2 and chapter 3. On clicking the name of a topic, the web page should scroll down to display the contents of that topic. There should also be a provision to move back to the list of topics given at the top of the *HTML* page.