 **KIST COLLEGE OF MANAGEMENT**

**Full Marks: 60**

**Pass Marks: 36**

**Time: 3 hrs.**

**Affiliated to Tribhuvan University**

**Kamalpokhari, Kathmandu**

**September, 2024**

**Pre - Board Examination**

**BIM / Fourth Semester / IT 240: Business Data Communication & Networking**

*Candidates are required to answer the question in their own words as far as practicable.*

**Group – A**

**Brief Answer Questions: [10 x 1 = 10]**

1. What is the function of Transport layer in OSI model?
2. Why we needed DHCP protocol?
3. Define backbone network.
4. What are the components used in DSL architecture?
5. List out the different Network design tools used for Network planning.
6. What is the major differentiate between TCP & UDP.
7. Why we needed Telnet?
8. Differentiate between HTTP and HTTPs?
9. Discuss the advantages of Fiber to the home. (FTTH)
10. List the major components of WLAN.

**Group – B**

**Short Answer Questions (Attempt Any Five Questions): [5 x 3 = 15]**

1. Differentiate between guided and unguided transmission media with examples.
2. Why we needed VLAN? Explain VLAN Architecture.
3. Explain the working principle of VPN with its types.
4. How DNS work? Explain its architecture.
5. What is TCP 3-way handshaking process? Explain.
6. Explain about network Development life cycle.

**Group – C**

**Long Answer Questions (Attempt Any Three Questions): [3 x 5 = 15]**

1. Define error detection. A message 10110101011 is transmitted with standard CRC methods. A polynomial generator P(x) = x3+1. Calculate transmitted frame. During transmission, 5th bit from left is interchange, also show the error detection in receiving side.
2. Define routing table. Differentiate static routing table with dynamic routing table.
3. A digital data is 11001011, encode that data into signal by using following techniques:
4. NRZ-I
5. RZ
6. FSK
7. BPSK
8. Manchester
9. Why do we need sub-netting? Suppose you are the network admistrator of your company & your company uses 15.20.0.0/19 network. Perform sub-netting & calculate subnet mask, network address, Usable host address range & broadcast address of each subnet.

**Group – D**

**Comprehensive Answer Questions: [2 x 10 = 20]**

1. **Suppose you are network designer of your organization & you need to design network for 150 computers. Which topology, network model, protocol, device, cable and IP address you prefer? Justify your answer.**
2. Why we needed media access control protocols? Explain about persistent & non persistent CSMA. Compare between CSMA/CD & CSMA/CA.

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