UNIVOTEC

UNIVERSITY OF VOCATIONAL TECHNOLOGY
Faculty of Training Technology
Bachelor of Technology in Information & Communication Technology
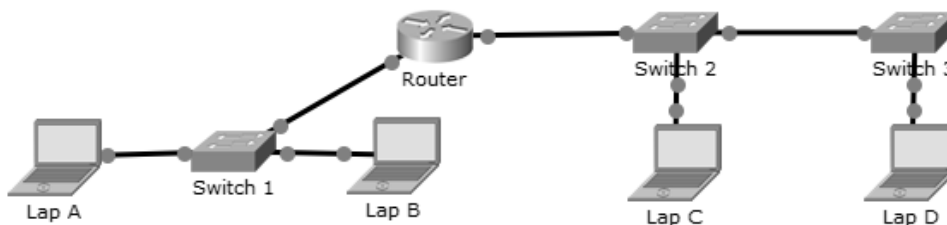## (Multimedia & Web, Software, Network) 2015 / 2016 (B1)
Year I – Semester- I Examination - September -2015

Computer Networks IT10404

Instructions: Answer all questions

Duration   :   03 Hours
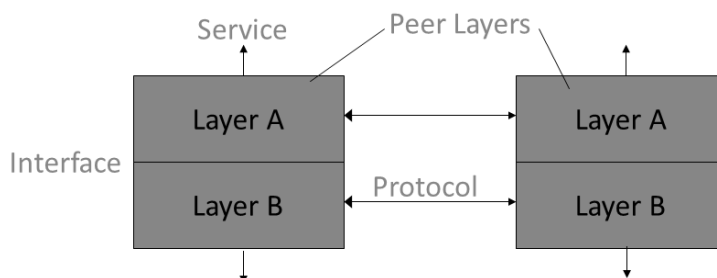
1. What is a computer network? Give 3 examples to describe use of network.   [5 marks]

2. Describe two kinds of computer network with examples   [5 marks]

3. Why communication architecture is useful? State 7 layers related OSI model in order.   [5 marks]

4. Show actual and logical communication for the following diagram as per OSI model.
    a.   In between A and B
    b.   In between A and D

    a.   Assign IP addresses for the above network.

          [20 marks]

5. Describe following 4 terminologies.

          [10 marks]

6. Packet forwarding can happen in either connection-oriented or connection-less manners. Discuss on them. [5 marks]

7. What is the use of ARP(Address Resolution Protocol)? [5 marks]

8. For the fragmentation/reassemble of data at the network layer level, IP header includes three values. What are they? Describe them. [5 marks]

9. Reliability, Jitter, Delay and Bandwidth are parameters to measure Quality of Services.
    a. Describe them.
    b. How those parameters impact on E-mail and voice-call.

    [5 marks]

10. Public IP addresses of IP v4 addresses are limited. What is the solution for that when there is a network configured in IP v4 ? Describe it. [5 marks]

11. Sub-networking is so helpful to manage a network.

    a. Justify the above mentioned statement.

    b. What are the advantages of Class-Less addresses over Class-Full addresses?

    c. There is a network with 1250 computers. Introduce a possible IP address range for the particular network.

    d. Introduce the above network into sub-networks with 250 computers using assigned IP address space efficiently. Mention the default gateway, broadcast and network addresses of the **second usable sub-network**.
    Note: First sub-network and last sub-network are not usable.

    [20 marks]

12. Data link layer is the second layer according to OSI model.

    c. What are the functionalities related to data link layer? Describe each using one sentence.

    d. Draw the structure of data link layer related data unit.

    e. Parity is one method of detecting error at the data link layer. What is the functionality of parity?

    [10 marks]