



UNIVERSITY OF VOCATIONAL TECHNOLOGY

Faculty of Training Technology

Bachelor of Technology in Information & Communication Technology

(Multimedia & Web, Software, Network) 2015 / 2016 (B1)

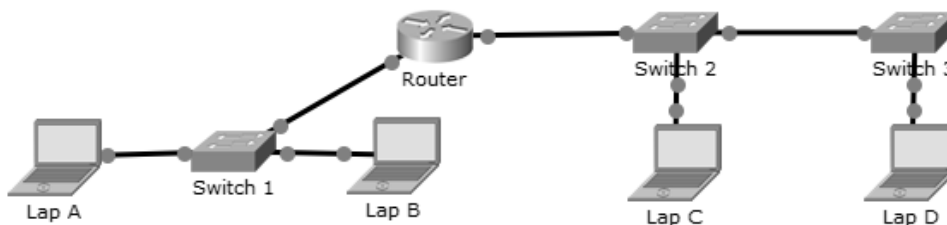
Year I – Semester- I Examination - September -2015

Computer Networks IT10404

Instructions: Answer all questions

Duration : 03 Hours

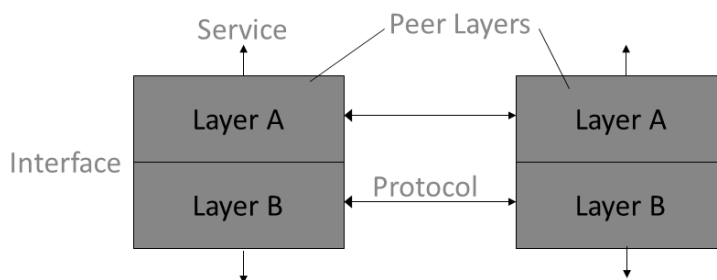
1. What is a computer network? Give 3 examples to describe use of network. [5 marks]
2. Describe two kinds of computer network with examples [5 marks]
3. Why communication architecture is useful? State 7 layers related OSI model in order. [5 marks]
4. Show actual and logical communication for the following 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]