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CSIT626 Enrol. No. .....

[ET]

END SEMESTER EXAMINATION : NOV. – DEC, 2017

INTRODUCTION TO NETWORKS

Time : 3 Hrs. *Maximum Marks : 70*

Note: ***Attempt questions from all sections as directed.***

SECTION – A (30 Marks)

Attempt any **five** *questions out of* **six.**

Each question carries **06** *marks.*

1. Explain the use of network devices. Describe the basic structure of the Internet.

2. Describe the purpose of Cisco IOS. Use Cisco IOS commands to limit access to device configurations.

3. Explain how the TCP/IP model and the OSI model are used to facilitate standardization in the communication process.

P.T.O.

4. Describe fiber-optic cabling and its main advantages over other media. Identify the basic characteristics of copper cabling.

5. Explain how a switch builds its MAC address table and forwards frames.

6. Describe the role of the major header fields in the IPv4 and IPv6 packet.

SECTION – B (20 Marks)

Attempt any **two** *questions out of* **three.**

Each question carries **10** *marks.*

7. Describe the purpose of the transport layer in managing the transportation of data in end-to-end communication. Compare User Datagram Protocol and Transmission Control Protocol.

8. Compare the characteristics and uses of the unicast, broadcast, and multicast IPv4 addresses. Explain the Classes of IPv4 addressing concept and define the public, private, and reserved IPv4 addresses.

9. Explain how the functions of the application layer, session layer, and presentation layer work together to provide network services to end user applications. Describe how web and email protocols operate.

SECTION – C (20 Marks)

(Compulsory)

10. (a) A class C address of 198.160.12.0/24 has been allocated. Above network has the following requirements.

* Mumbai HQ = 50 host addresses
* Jaipur HQ = 26 host addresses
* Delhi HQ = 10 host addresses
* Lucknow HQ = 10 host addresses
* Three WAN links = 2 host addresses (each)

Find the following for above network with the appropriate calculations :

(i) Subnet address

(ii) AddressRange (First and Last address)

P.T.O.

(iii) Broadcast Address

(iv) Network/Prefix (12)

(b) How to apply troubleshooting methodologies to resolve problems? Explain the use of Ping and tracert commands. (8)