

2015*Time : 3 hours**Full Marks : 80*

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

Answer any five questions in which

Q. No. 1 is compulsory.

1. Choose the correct answer of the following :

(a) Audio signals are :

- (i) Continuous
- (ii) Periodic
- (iii) Aperiodic
- (iv) Both (i) and (iii)

(b) A transmission media ^{mode} may be :

- (i) Half-duplex
- (ii) Simplex and full-duplex

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(iii) Both (i) and (ii)

(iv) Half-duplex and full-duplex

(c) Virtual Channel (VC) describes a / an _____ transport of ATM cells associated by a common unique identifier value.

(i) Bidirectional

(ii) Unidirectional

(iii) Both (i) and (ii)

(iv) Asymmetric

(d) In PBX the communication between terminals occurs based on :

(i) Sending Packets

(ii) Dedicated connection

(iii) Both (i) and (ii)

(iv) None of the above

(e) The central element in Star topology is referred to as :

(i) Switch

(ii) Bridge

(iii) Hub

(iv) None of the above

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(f) Which of the following are topologies ?

(i) Bus

(ii) Star

(iii) Tree

☒ (iv) All of the above

(g) Encryption provides us _____ security requirement.

(i) Confidentiality

☒ (ii) Integrity

(iii) Availability

(iv) Authenticity

(h) Which one of the following is not an Active Attack ?

(i) Masquerade

(ii) Denial-of-Service

(iii) Traffic analysis

☒ (iv) Replay

☒ 2. Discuss about Impairments in data transmission.

3. Discuss Channel Capacity and also discuss the

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difference in Nyquist bandwidth and Shannon channel capacity.

4. Discuss statistical TDM in details (Frame formats and operation). Compare Statistical TDM with Synchronous TDM.

5. What is Error Control ? Describe Selective-Reject ARQ and Stop-and-Wait ARQ.

6. Give reasons as to why full duplex is more challenging than simple and half duplex transmission.

7. Explain packet switching and circuit switching.

8. Discuss security requirements and attacks. Discuss the differences between DES and RSA.

9. Write short notes on the following :

(a) Spread spectrum

2012 (b) ATM → service models ?

(c) LAN topologies and comparison thereof

2011 (d) Transmission media and classification thereof

