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**[5559]-209**

**S.E. (IT) (Second Semester) EXAMINATION, 2019**

**FOUNDATIONS OF COMMUNICATION AND COMPUTER  
NETWORK**

**(2015 PATTERN)**

**Time : 2 Hours**

**Maximum Marks : 50**

**Instructions to the candidates:**

- 1) Answer Question 1 or 2, 3 or 4, 5 or 6, 7 or 8
- 2) Figures to the right indicate full marks.
- 3) Assume suitable data, if necessary

Q.1 A) Explain various types of Guided Media used in Physical layer.

[06]

B) With respect to FM discuss following terms?

- i) Frequency deviation      ii) Deviation ratio      iii) Bandwidth of FM

[06]

**OR**

Q.2 A) Explain any three network topology with advantages and disadvantages?

[06]

B) What is FM? Derive a mathematical expression for FM wave.

[06]

Q.3 A) List the Line Coding schemes used in digital transmission. Explain Polar NRZ and Uni-polar NRZ schemes.

[07]

B) Explain CRC generator and CRC checker with suitable example.

[06]

P.T.O.

**OR**

Q.4 A) what is mean by Entropy (Average Information)? Derive expression for Entropy? State it's Properties. [07]

B) Explain with suitable example generation of Hamming Codes for 11 bit codeword. [06]

Q.5 A) Draw and Explain TDM Multiplexing and De-multiplexing Process. [06]

B) Compare Spread spectrum modulation techniques: FHSS and DSSS. [06]

**OR**

Q.6 A) Explain HDLC with the help of its frame formats I-frame, S-frame, & U-frame. [06]

B) Discuss CSMA/CD random access technique. How collision avoidance achieved in the same? [06]

Q.7 A) What is mean by switching? Explain Circuit switching in detail with help of Three Phases, Efficiency and delay. [07]

B) Draw and explain each field of MAC Frame Format of IEEE 802.3. [06]

**OR**

Q.8 A) Explain with suitable diagrams Repeaters, Bridges and Routers used in networking. [07]

B) Explain following physical layer implementation in Fast Ethernet:

i) 100BaseTX ii) 100BaseFX iii) 100BaseT4

With respect to media, Maximum Length and Line encoding. [06]