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S.E. (I.T.) (II Semester) EXAMINATION, 2019

**FOUNDATIONS OF COMMUNICATION AND COMPUTER NETWORK**

(2015 PATTERN)

Time : Two Hours

Maximum Marks : 50

N.B. :— (i) Answer Question Nos. 1 or 2, 3 or 4, 5 or 6, 7 or 8.

(ii) Figures to the right indicate full marks.

(iii) Assume suitable data, if necessary.

1. (A) What is Guided Media ? Explain types of Guided media with suitable diagrams. [6]
- (B) With the help of diagram explain AM. Write mathematical expression of AM modulated signal. [6]

Or

2. (A) Explain with examples different addressing schemes used in TCP/IP. [6]
- (B) What is bandwidth required for FM in which the Modulating frequency is 2 kHz and maximum possible deviation is 10 kHz. Assume highest needed sidebands 6. Also calculate using Carson's rule. [6]

P.T.O.

3. (A) Explain the following shift keying techniques with suitable examples : [6]

(i) ASK

(ii) FSK

(iii) PSK

- (B) What is CRC ? Generate the CRC code for message 1101010101.

Given generator polynomial  $g(x) = x^4 + x^2 + 1$ . [7]

Or

4. (A) Explain Pulse Code modulation and Delta modulation with suitable diagram. [6]

- (B) Explain the working mechanism of Go back-N and Selective Repeat ARQ. [7]

5. (A) Explain FDM and TDM multiplexing with their advantages and disadvantages. [6]

- (B) Explain principle of Direct Sequence Spread Spectrum (DSSS) Modulation with help of block diagram. [6]

Or

6. (A) What is spread spectrum ? Explain FHSS with its advantages and disadvantages. [6]

- (B) Explain TDMA and CDMA with neat diagram. [6]

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7. (A) Explain functions of Hub, repeater, switch and routers. [7]  
(B) Explain circuit switched networks with three phases. [6]

Or

8. (A) What is switching? Explain in detail packet switching technique along with its advantages and disadvantages. [7]  
(B) Draw and explain MAC Frame Format of 802.3. Explain each field in detail. [6]