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**[4957]-1089****S.E. (I.T.) (Second Semester) EXAMINATION, 2016****FOUNDATION OF COMPUTER NETWORKS****(2012 PATTERN)****Time : Two Hours****Maximum Marks : 50****N.B. :—** (i) Answer *four* questions.

(ii) Figures to the right indicate full marks.

(iii) Assume suitable data, if necessary.

1. (a) Explain FDM and TDM multiplication techniques. [6]
- (b) Calculate the bandwidth of noiseless channel having maximum bit rate of 24 Kbps and 8 signal levels. [7]

*Or*

2. (a) Explain in brief Nyquist theorem for noiseless channel. Consider a noiseless channel with a bandwidth of 3000 Hz transmitting a signal with *two* signal levels. Calculate the maximum bit rate. [7]
- (b) Explain pulse code modulation with suitable diagram. [6]

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3. (a) Elaborate the types coaxial cable. [6]  
(b) What are the functions of transport layer ? [6]

*Or*

4. (a) Explain the propagation modes of optical fibre cable. [6]  
(b) Write a short note on backbone network. [6]
5. (a) What is hamming code ? Generate code words using hamming code for following data words [7]  
1011, 0101  
(b) Explain selective repeat ARQ for noiseless channels. [6]

*Or*

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6. (a) Write a short note on character oriented framing methods. [6]  
(b) Explain *two* dimensional parity check. [7]
7. (a) Write a short note on CSMA/CD. [6]  
(b) Explain types of standard Ethernet and Gigabit Ethernet. [6]

*Or*

8. (a) Compare FDMA, CDMA, TDMA. [6]  
(b) Explain the frame format for IEEE 802.3. [6]