

RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College under University of Calcutta)

SECOND YEAR

B.A./B.SC. FOURTH SEMESTER (January – June) 2013

Mid-Semester Examination, March 2013

Date : 04/03/2013

COMPUTER SC. (Honours)

Time : 2 pm – 4 pm

Paper : IV

Full Marks : 50

Group A (Data Communication & Networking)

Answer **question no.1** and **any two** from the rest

1. Answer **any two** from the following: 2 x 2½
 - a) State Nyquist theorem. Explain with an example.
 - b) What do you mean by attenuation problem? Give techniques to overcome this problem for analog & digital communication.
 - c) Explain the concept of Subnet with proper diagram.
 - d) Explain the idea of Guard band.
2. a) Compare and contrast between ISO-OSI & TCP/IP reference model for data communication. 5
b) Discuss main responsibilities of data-link layer. 5
3. a) Explain Manchester & Differential Manchester line coding technique with proper example. 5
b) Explain the idea of delta modulation with proper example. 5
4. a) Describe the structure of optical fiber cable. Explain different operational mode of optical fiber? 3+3
b) Write a short note on **any one** of the following: 1 x 4
 - i)VSAT ii)Frequency Modulation iii)QAM

Group B (Microprocessor)

Answer **question no. 5** and **any three** from the rest

5. Answer **any five** questions: 5x2
 - a)What determines that Microprocessor is an 8, 16 or 32 bit?
 - b) Define Opcode and operand.
 - c) What is the function of the accumulator?
 - d) Can an input port and an output port have the same port address? Explain.

- e) What are the control signals necessary for Memory Mapped I/O?
 - f) What is a monitor program?
 - g) What are the roles of W and Z registers?
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- 6. Explain the programming model of 8085 microprocessor with the help of suitable diagram. 5
 - 7. Explain demultiplexing of the bus AD_7-AD_0 . 5
 - 8. Draw and explain the timing diagram for opcode fetch operation. 5
 - 9. a) What is the concept of foldback memory?
 - b) What is the difference between peripheral mapped I/O and memory mapped I/O? 3+2