

# RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College under University of Calcutta)

B.A./B.Sc. FOURTH SEMESTER EXAMINATION, MAY 2015

SECOND YEAR

COMPUTER SCIENCE (Gen)

Date : 28/05/2015

Time : 11 am – 1 pm

Paper : IV

Full Marks : 50

[Use a separate Answer Book for each group]

## Group – A

Answer **any one** question from the following :

1. Discuss functionalities of physical layer and network layer. [5]
2. Describe various modes of data transmission. [5]

Answer **any two** questions from the following :

3. a) Describe the advantages and disadvantages of star topology. [4]  
b) Differentiate time domain and frequency domain representation of signals. [4]  
c) What is Baud rate? [2]
4. a) What do you mean by peer-to-peer process? [2]  
b) Explain working principle of fibre optics. [4]  
c) Compare Circuit Switch and Packet Switch. [4]
5. a) An IP address of a block of IP's is given as 192.168.37.39/28. Find out first address, last address and number of address of the block. [4]  
b) Why IP Address is unique and universal? [2]  
c) Differentiate: Router and Hub. [4]
6. a) Explain HTTP and FTP. [4]  
b) Write types of Co-Axial cable and state advantages of Twisted-pair cable. [4]  
c) What are the protocols for Email? [2]

## Group – B

Answer **any one** question from the following :

7. Design a DFD (upto Level 2) for Online Admission System of a College. [5]
8. Describe SDLC. [5]

Answer **any two** questions from the following :

9. a) State different phases of spiral model. [6]  
b) What are the drawbacks of this model? [2]  
c) Give examples of types of projects where spiral model and prototype models can be used? [2]
10. a) Define Data Dictionary. [2]  
b) What is the difference between DFD and flowchart? [4]  
c) Differentiate between cohesion and coupling. [4]
11. a) Compare Logical DFD Vs Physical DFD. [4]  
b) Compare validation and verification. [3]  
c) Explain why spiral model is considered as meta model. [3]
12. a) Differentiate white box and black box testing. [4]  
b) Distinguish between an error and a failure in the context of program testing. Testing detects which of these two? Justify your answer. [4]  
c) What do you mean by good SRS? [2]