

RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College under University of Calcutta)

B.A./B.SC. FOURTH SEMESTER EXAMINATION, MAY 2012

SECOND YEAR

COMPUTER SCIENCE (General)

Date : 25/05/2012

Time : 11 am – 1 pm

Paper : IV

Full Marks : 50

Answer **any five** questions :

1. a) What do you mean by Open System Inter-Connection? List and describe the functionalities of the protocol used in different layers in the Internet model. [2+6]
b) Prove that for Mesh Topology number of links required to connect N Stations is $N(N-1)/2$. [2]
2. a) What do you mean by IP addressing? Describe the concept of Class A, Class B and Class C network. [3+4]
b) Give the concept of Coupling and Cohesion in software engineering. [3]
3. a) What is SRS? What are the features of good SRS? [2+2]
b) Design a DFD for “Library Book Issuing System”. What is Data Dictionary? [4+2]
4. a) Describe the Checksum method for error detection and correction. In which layer of OSI model is it used? [4+1]
b) What do you mean by Peer to Peer process? Describe the functions of Data link layer and presentation layer in OSI model. [1+2+2]
5. a) Describe the role of prototype model in software development. Discuss the advantages and disadvantages of Waterfall model. [5+3]
b) What do you mean by Data Dictionary? [2]
6. a) Describe the functionalities of the following connecting devices :
i) Hub (Active and Passive), ii) Repeater, iii) bridge [6]
b) What do you mean by SRS? Describe the requirement analysis phase for software development in brief. [1+3]
7. a) What is Test plan? Distinguish between White box testing and black box testing? [2+3]
b) Differentiate between Superneting and Subnetting. What do you mean by NAT? [3+2]

