M.Sc. 4th Semester Examination, 2012

ELECTRONICS

(*Computer Networking*)

PAPER– ELC-402

(Theory)

Full Marks : 50

Time : 2 hours

Answer **Q. No. 1** and any **three** from the rest

The figures in the right-hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

1. Answer *all* questions : 2 × 5

(*a*) Define half duplex and full duplex mode of data transmission.

(*b*) What is Bus topology ?

(*c*) What is the function of physical layer of ISO model of Networks ?

(*d*) If a periodic signal is decomposed in to five sine waves with frequencies 200, 400, 600, 800, 1000 Hz. What is the bandwidth ? Draw the spectrum assuming all components have a maximum amplitude of 12 V.

(*e*) Write down the different service primitives in networking system.

2. (*a*) Define single bit error and burst error in a communication system.

(*b*) What is cyclic redundancy check (CRC) error correction ? Give example.

(*c*) Compute Hamming code for the input data '1100101'. If the fourth bit from LSB is transmitted erroneously (one is transmitted of zero), how do you detect it using Hamming code ? 2 + 4 + 4

3. (*a*) Explain substitution ciphers in detail.

(*b*) What do you mean by cardinality ? Discuss different types of cardinality with example. 6 + 4

4. (*a*) Write down the difference between ISO/OSI and TCP/IP.

(*b*) What is FDDI ?

(*c*) Explain the structure of telephone system for a medium-distance call. 4 + 2 + 4

(*a*) Discuss briefly a simplex stop and wait protocol.

(*b*) What is the role of network interface card ?

(*c*) Draw the block diagram of a Modem. 7 + 2 + 1

(*a*) Discuss briefly IEEE standard 802·4 with frame format.

(*b*) State the difference between HTTP and FTP.

(*c*) Explain briefly frequency division multiplexing. 5 + 1 + 4

[*Internal Assessment* : 10 Marks]