22634

22223

3 Hours / 70 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following: **10**

a) State two advantages of computer networks.

b) Draw labelled frame format of serial and parallel data transmission.

c) List two unguided media.

d) State any two functions of network layer in TCP/IP reference model.

e) State two functions of firewall.

f) State need of IPv6.

g) State two functions of data link layer of TCP/IP reference model.

Marks

2. Attempt any THREE of the following: **12**

a) Explain with neat labelled diagram the working of star topology. State its any two advantages.

b) Draw the block diagram of data communication and state the function of each block.

c) Compare between OSI model and TCP/IP protocol model.

d) Generate CRC code for the data word of 100101011. The divisor is 10101.

3. Attempt any THREE of the following: **12**

a) Explain four level addressing used in TCP/IP reference model.

b) Describe transition phase of PPP.

c) Find the sub network address and host id of

	IP address	Mask
i)	200.34.22.18	255.255.255.240
ii)	147.181.14.16	255.255.224.0

d) Describe the concept of File Transfer Protocol (FTP) with neat diagram.

4. Attempt any THREE of the following: **12**

a) Compare FDM and TDM with respect to

i) Synchronisation

ii) Working principle

iii) Cross talk

iv) Efficiency

b) Explain stop and wait protocol under noisy condition.

c) Describe the different modes of light propagation in fiber optic cable with diagram.

d) On which layer the following devices work

i) Hub

ii) Switch

iii) Router

iv) Repeater

e) Explain virtual circuit approach for switching.

Marks

5. Attempt any TWO of the following: **12**

a) Explain peer to peer and client server architecture with suitable example.

b) Draw layered architecture of the OSI model. State functions of various layers.

c) Classify MODEMS. State one feature of each type of MODEM.

6. Attempt any TWO of the following: **12**

a) Suggest the topology for millitary application with justification. Give advantages and disadvantages of that topology.

b) i) State the types of error detection methods. **2**

ii) In a particular data transmission system, the data received was 1011010 using 7 bit odd parity hamming code, determine the correct code. **4**

c) Draw block diagram of asymmetric key cryptography and state the function of various components.

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