

M.Sc. 3rd Semester Examination, 2013

**COMPUTER NETWORKS AND
INTERNET TECHNOLOGY**

PAPER—MSC - 301 (Module I & II)

Full Marks : 50

Time : 2 hours

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

MODULE – I

(Computer Networks)

[Marks : 25]

Answer any two questions : 10 × 2

- 1. (a) Assume a data stream is made of the following bit sequence : 10110011. Encode this stream using RZ line coding scheme. 4**

(Turn Over.)

- (b) How is baud rate related to transmission bandwidth in FSK ? 2
- (c) If the number of points in a constellation is 8, how many bits can we send per baud ? 2
- (d) "Phase modulation (PM) is superior than Amplitude modulation (AM)".—Justify if the statement is correct or not. 2
2. (a) How does FDM combine multiple signals into one ? 4
- (b) What do you mean by bit-padding ? 3
- (c) What kind of error is undetectable by checksum checker ? What are the conditions for the polynomial used by the CRC generator ? 2 + 1
3. (a) Why the size of the sender and receiver window must be at most 2^{m-1} , in selective repeat ARQ technique ? 3
- (b) Bit-stuff the following data :
00111111010111011111110 1

(3)

- (c) What is the purpose of jam signal in CSMA/CD ? How does CSMA/CD differ from CSMA/CA ? 2 + 2
- (d) What is 'token ring' ? 2
4. (a) Write down the differences between datagram approach and virtual circuit approach in packet switching. 3
- (b) Briefly describe HDLC's station types, configurations and mode of communication with proper diagram. 2 + 2 + 2
- (c) What is the function of Bridse ? 1

[*Internal Assessment* : 05]

MODULE – II

(*Internet Technology*)

[*Marks* : 25]

Answer any **two** questions : 10 × 2

1. (a) What is the purpose of NAT ? How does it work ? 2 + 3

- (b) What do you mean by adaptive routing?
Briefly discuss 'Distance vector routing'
technique in this concern. 1 + 4
2. (a) Describe how the actual mail transfer is done
by mail transfer agents. 5
- (b) Describe the functions of the two FTP
connections. 3
- (c) What is URL? 2
3. (a) What is connection-oriented service? 3
- (b) What is the address that is added at the
network layer? 1
- (c) What is DNS? 2
- (d) Briefly describe TCP header. 4
4. Write short notes (any two): 5 × 2
- (i) Leaky bucket algorithm

(5)

(ii) TCP frame format

(iii) Supernetting

(iv) WWW.

[Internal Assessment : 05]
