

SUBJECT CODE NO:- P-182
FACULTY OF ENGINEERING AND TECHNOLOGY
S.E.(CSE/IT) Examination MAY/JUNE-2016
Computer Networks-I
(Revised)

[Time: Three Hours]

[Max Marks:80]

“Please check whether you have got the right question paper.”

N.B

i) Question No.1 and 6 is compulsory.

ii) Attempt any two questions from Q.No.2 to Q.No.5 and Q.No.7 to Q.No.10 of each section.

Section A

- | | | |
|-----|--|----|
| Q.1 | Attempt <u>any five</u> : | 10 |
| | a) State different characteristics of data communication. | |
| | b) What is the difference between half duplex and full duplex transmission mode? | |
| | c) What is transmission impairment? Give its types. | |
| | d) Why we need to multiplex data? State the types of multiplexing techniques. | |
| | e) Define Burst Error. | |
| | f) Why we use switching? | |
| | g) Define block coding and give its purpose. | |
| | h) What is data rate? Give data rate for LAN. | |
| Q.2 | a) Why data communication is important? Explain the significance of it with example. | 08 |
| | b) Explain frequency hopping spread spectrum. | 07 |
| Q.3 | a) Explain layered architecture of OSI model with suitable diagram. | 08 |
| | b) What is Hamming distance for each of the following code words? | 07 |
| | i. d(10000 , 00000) | |
| | ii. d(10101 , 10000) | |
| | iii. d(11111 , 11111) | |
| | iv. d(000 , 000) | |
| Q.4 | a) Explain CRC in detail with the help of an example. | 08 |
| | b) Explain Polar Line Coding Schemes. | 07 |
| Q.5 | Write short note on (<u>Any three</u>) | 15 |
| | a) Scrambling | |
| | b) Serial Transmission | |
| | c) STDM (Synchronous Time Division Multiplexing) | |
| | d) Circuit Switched Network | |
| | e) Error Detection | |

Section B

- Q.6 Attempt any five : 10
- a) Define I-persistent CSMA scheme.
 - b) In what environment it is necessary to have MAC for data communication.
 - c) In what way CDMA differ from FDMA?
 - d) A block of address is given one of the address 205.16.37.39/20. What is the first address in the block?
 - e) Define Roaming concept.
 - f) State the difference between Soft Handoff and Hard Handoff.
 - g) Change this IPV₄ address to binary notation : 111.56.45.78
 - h) What is Active Hub and Passive Hub?
- Q.7 a) Explain CSMA/CD protocol in detail along with the flow chart. 08
- b) What is NAT? How can NAT help in address depletion? Explain with diagram. 07
- Q.8 a) Explain how the performance of CSMA/CD is better than ALOHA protocol. 08
- b) Describe Cellular telephony in detail. 07
- Q.9 a) Compare and contrast flow control and error control. 08
- b) An ISP is granted a block of address starting with 190.100.0.0/16 (65, 536 address). The ISP needs 07 to distribute these addresses to three group of customers as follows:
- i. The first group has 64 customers; each needs 256 addresses.
 - ii. The second group has 128 customers each needs 128 addresses.
 - iii. The third group has 128 customers each needs 64 addresses.
- Design the sub blocks and find out how many address are still available after these allocations.
- Q.10 Write short note on. (Any three) 15
- a) NAT
 - b) Router
 - c) IPV₆
 - d) Scatternet
 - e) CDMA