



SF-8192

B. E. II (Sem. IV) (IT) Examination

May / June – 2011

Data Communication & Networking

Time : 3 Hours]

[Total Marks : 100

Instructions :

(1)

नीचे दृष्टावेक निशानीवाणी विगतो उत्तरवडी पर अवश्य लपवी.
Fillup strictly the details of signs on your answer book.

Name of the Examination :
B. E. 2 (Sem. 4) (IT)

Name of the Subject :
Data Communication and Networking

Subject Code No. : 8 1 9 2 Section No. (1, 2,.....): Nil

Seat No. :

Student's Signature

- 1 (a) Do as directed : 10
- (1) Define : Half duplex mode of communication.
 - (2) Fiber optic is not an example of transmission media.
(True/False)
 - (3) Give full form of FDDI.
 - (4) Define frequency of a signal.
 - (5) What is Nyquist theorem ?
 - (6) Which network topology requires terminators at the ends of the lines ?
 - (7) What is being described here-> pairs of copper wires twisted around each other.
 - (8) Define : unicast, multicast and broadcast in term of networking. 3
- (b) (1) Differentiate serial and parallel transmission. 2
- (2) Explain standards and standard organizations. 5
- (3) Define each category of network. 3
- 2 (a) What is OSI model ? Explain duties of different layers of OSI model in detail. 8

OR

- (a) Construct a systematic (7,4) cyclic redundancy code using generator polynomial $g(x)=x^3+x^2+1$. Consider a data vector $d=1001$. 8
- (b) What is transmission medium ? Explain different types of guided and unguided transmission medium in detail. 7
- 3 Attempt any three :** **15**
- (1) Explain the following LANs :
- (i) Token ring
- (ii) Ethernet
- (2) Write short note on : Transmission impairment.
- (3) Show Manchester encoding and differential Manchester encoding for the 8-bit data stream -11000101.
- (4) Explain circuit switching.
- 4 (a) Do as directed :** **10**
- (1) Define port address, logical address and physical address. **3**
- (2) Give full form of NRZ.
- (3) Router functions in _____ layer.
- (4) A sine wave completes 1000 cycles in one second. What is its period ?
- (5) _____ signals repeat itself after a fixed time period.
- (6) In _____ routing algorithm, every router has its own unique routing table.
- (7) What are the three major multiplexing techniques ?
- (8) Frequency of a signal is inversely proportional to its period. (True/False)
- (b) (1) What is a router ? **2**
- (2) List the protocols of application layer. Explain any one. **5**
- (3) Explain TELNET with appropriate commands. **3**

5 (a) Explain Shannon capacity and Nyquist Theorem with example. 8

OR

(a) Differentiate distance vector and link state routing algorithms. 8

(b) Explain Null Modern with pin configuration. 7

6 Attempt any **three** : 15

(1) What is a bridge ? Also, discuss various types of bridges.

(2) Explain wave division, multiplexing.

(3) Explain message switching.

(4) Explain optimality principles and discuss the types of routing algorithms.
