

Name :

Roll No. :

Invigilator's Signature :

CS / MBA(NEW) / SEM-4 FT & 6 PT / SM-406 / 2011

2011

FUNDAMENTALS OF NETWORKING

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

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

GROUP – A

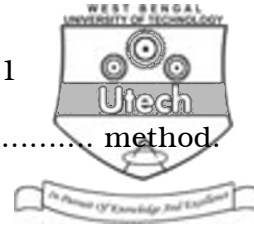
(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following :

10 × 1 = 10

- i) A bridge operates in both
 - a) Physical and data link layer
 - b) Data link and network layer
 - c) Network and transport layer
 - d) Transport and application layer.

- ii) is a digital multiplexing technique.
 - a) FDM
 - b) TDM
 - c) CDMA
 - d) WDM.



- iii) CRC is a highly accurate method.
- a) error-detection
 - b) error-correction
 - c) error-handling
 - d) error-control.
- iv) is the main protocol used to access data on the WWW.
- a) SMTP
 - b) FTP
 - c) HTTP
 - d) HDLC.
- v) A digital signal is a composite analog signal having
- a) infinite bandwidth
 - b) wide bandwidth
 - c) narrow bandwidth
 - d) finite bandwidth.
- vi) Go back N ARQ has receiver window size
- a) N
 - b) 2^N
 - c) $N - 1$
 - d) 1.
- vii) Which one is the best among the CSMA techniques ?
- a) 1-persistent
 - b) Non-persistent
 - c) p-persistent
 - d) both 1-persistent and non-persistent.



- viii) Which of the following is an application layer service ?
- a) Network virtual terminal
 - b) File transfer, access and management
 - c) Mail service
 - d) All of these.
- ix) TCP is a/an
- a) Reliable connection oriented protocol
 - b) Unreliable connection oriented protocol
 - c) Reliable connection protocol
 - d) Unreliable connectionless protocol.
- x) Which of the following is a class C host address ?
- a) 230.0.0.0
 - b) 130.4.5.6
 - c) 200.1.2.3
 - d) 30.4.5.6.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. What do you mean by firewall ? What are its advantages ?
2 + 3
3. Explain various classes of IP-address.
4. Compare circuit switching, packet switching and message switching.
5. Compare ASK, FSK and PSK with diagram.
6. Explain the two fundamental cryptographic principles.



GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. Explain the following with necessary diagram : Amplitude Modulation (AM), Frequency Modulation (FM), Pulse Code Modulation (PCM), Multiplexing. What are the major advantages of Digital Communication over Analogue Communication ? 10 + 5
8. Discuss the different types of Network Topology. What do you mean by Token Bus and Tokenring techniques ? Explain Subnetting and Supernetting with suitable examples.
9. Draw the representation of digital signal 1001110 for NRZ-L, NRZ-I and Manchester coding waveforms and explain. Comment on the statement "Band rate and bps are essentially the same". Why are protocols and standards needed in data communications ? 7 + 3 + 5
10. How is Mobile computing different from WAN ? Explain features of WAP. Explain the difference between synchronous and asynchronous communications. 4 + 5 + 6
11. Explain class A, B, C, D and E types of networking in terms of their addressing scheme under IPV4. What are the limitations of IPV4 addressing system ? What are the difficulties in implementation of IPV6 addressing system ? 8 + 3 + 4
