

## Bachelor of Computer Applications 5<sup>th</sup> Semester

### Computer Networks

Time allowed: 3 Hours

Max. Marks: 65

**Note:** Attempt One question each from Sections A, B, C and D. Section E is compulsory.

#### SECTION-A

- I** (a) Explain the features of LAN, MAN and WAN. (7)
- (b) Draw and describe various layers of TCP/IP model. How is it different from OSI reference model? (6)
- II** (a) What is the meaning of unguided transmission media and its benefits over guided media? Explain the working of microwave transmission. (7)
- (b) What is multiplexing in computer networks? Explain and differentiate between FDM and WDM in brief. (6)

#### SECTION-B

- III** (a) What are the design issues of Data Link Layer? (7)
- (b) What is an error in Computer Networks? Explain CRC technique with the help of suitable example. (6)
- VI** (a) What are the various assumptions of static channel allocation? (4)
- (b) What are the Sliding Windows Protocols? Explain Go-Back-N and Selective-Repeat Sliding Windows Protocols along with their advantages and disadvantages. (9)

#### SECTION-C

- V** (a) What are the various design issues of Network Layer? (9)
- (b) What do you understand by Subnetting? (4)
- VI** (a) What is congestion? What are the factors that lead to congestion in a network? Explain the principles of congestion control. (6)
- (b) Explain broadcast and multicast routing. (7)

#### SECTION-D

- VII** (a) Explain DNS and DNS servers. (6)
- (b) Explain terms HTTP and Network Security. (7)
- VIII** (a) Write short notes on the following terms :
- (i) World Wide Web
- (ii) File Transfer Protocol. (3x2=6)
- (b) Explain the architecture and services of an E-mail System. (7)

## SECTION-E

- IX**      Attempt all questions (2)
- (a) Define modulation. (2)
  - (b) What is IEEE 802.3? (2)
  - (c) What is an IP address? (2)
  - (d) What are the light emitting sources used in Fiber Optics? (2)
  - (e) What are the limitations of SMTP? (2)
  - (f) What are the advantages of flooding? (3)

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