4/EH–73 (iv) (Syllabus–2015)

2 0 1 8

(April)

COMPUTER SCIENCE

(Elective/Honours)

(Data Communication and Computer Networks)

(CS–401T)

Marks : 75

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

Answer **five** questions, taking **one** from each Unit

UNIT—I

1. *(a)* Discuss the three-common network topology. 6

   (b) Distinguish between point-to-point and broadcast links. 3

   (c) State the merits and demerits of fibre optics vis-à-vis twisted pairs. 6

   (d) Discuss the relationship between services and protocols. 3

(2)

2. *(a)* Write a short note on time-division multiplexing.

(b) Compare and contrast the go-back-NARQ protocol with selective-repeat ARQ.

(c) Explain the working of CRC.   4

(d) How does a single-bit error differ from a burst error?   3

UNIT—II

3. *(a)* How does the leaky bucket algorithm achieve traffic shaping?   5

(b) Discuss the shortest path routing algorithm.   7

(c) Explain virtual circuits.   3

4. *(a)* Explain distance vector routing. What is the count-to-infinity problem?   5+3=8

(b) Discuss in detail the IP datagram.   5

(c) What is jitter?   2

(3)

UNIT—III

5. *(a)* Discuss how TCP provides reliability using error control.   5

(b) Write a short note on crash recovery in transport layer.   4

(c) Describe the problems associated with establishing a TCP connection.   5

6. *(a)* Explain the different multiplexings in transport layer. How is multiplexing involved in transport layer different from that used in physical layer?   5+2=7

(b) With a proper diagram, discuss the TCP and UDP header formats.   4+3=7

UNIT—IV

7. *(a)* Explain in detail about the electronic mail.   8

(b) Describe the following :   3+3=6

(i) FTP

(ii) POP3

8. *(a)* Discuss in detail about the role of DNS. 8

(b) Write short notes on the following : 3+3=6
  (i) Telnet
  (ii) HTTP

UNIT—V

9. *(a)* Explain the client side of the WWW architecture.
5

(b) Write short notes on the following : 3+3=6
  (i) IIS
  (ii) Apache

(c) What is a Web Browser? Give some examples.
3

10. *(a)* What is a URL? Discuss its usage. 2+4=6

(b) Discuss briefly as to what is the Internet and how it works.
6

(c) What is the purpose of HTML? 2

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