V Semester B.C.A. Examination, November/December 2018
(CBCS) (F+R)
(2016 – 17 & Onwards)
COMPUTER SCIENCE
BCA – 501 : Data Communication and Networks

Time : 3 Hours                      Max. Marks : 100

**Instruction** : Answer all Sections.

**SECTION – A**

I. Answer any ten questions. Each question carries two marks. (10×2=20)

1) Mention four network topologies.

2) What is telnet? How it differs from FTP?

3) What is meant by protocol and internet protocol suite?

4) Define encoding and decoding.

5) What is piggybacking? What is its purpose?

6) What is the difference between ethernet and fast ethernet?

7) Define bit rate and baud rate.

8) What do you mean by Nyquist signalling rate? Explain.

9) What is CSMA and CSMA/CD?

10) What do you mean by IEEE 802.11 standards?

11) What do you mean by flooding? Explain.

12) Define datagram and packet.

P.T.O.
SECTION – B

II. Answer any five questions. Each question carries five marks. \(5 \times 5 = 25\)

13) Explain circuit switching.

14) How many layers are there in TCP/IP model? Mention the function of each layer.

15) Explain twisted pair cable as transmission medium.

16) Describe FDDI.

17) Explain 2-d parity check for error detection.

18) Explain HDLC frame structure.

19) Explain the differences between connection and connectionless services.

20) Explain the role of the following network devices:
   i) Hub
   ii) Switch
   iii) Bridge
   iv) Router
   v) Repeater.

SECTION – C

III. Answer any three questions. Each question carries fifteen marks. \(3 \times 15 = 45\)

21) a) Explain digital representation of information.
    b) Write a note on polynomial code with suitable example. \(7 + 8\)

22) a) Explain optical fibre as transmission medium.
    b) Explain different types of bridges in computer networks. \(7 + 8\)

23) a) Explain stop and wait ARQ with a neat diagram.
    b) Explain ALOHA and Slotted ALOHA. \(7 + 8\)
24) a) Explain frequency division multiple access and time division multiple access.
   b) Explain sliding window method of flow control. (8+7)

25) a) Explain LLC and MAC sublayers of data link layer.
    b) What do you mean by peer-to-peer protocol? Compare PPP with HDLC. (8+7)

SECTION – D

IV. Answer any one question. Each question carries ten marks. (1×10=10)

26) Explain OSI reference model in detail.

27) Explain any two routing algorithms.