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V Semester B.C.A. Examination, March/April 2021
(Y2K14) (CBCS) (F+R)
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 2 marks.

(10×2=20)

- 1) What is a link ? What are its types ?
- 2) Define PING and IPCONFIG.
- 3) Expand HTTP. Where is it used ?
- 4) What is a switch ?
- 5) What is Nyquist signalling rate for a noiseless channel ?
- 6) What is the difference between UTP and STP cables ?
- 7) Define encoding and decoding.
- 8) What is pipelining ?
- 9) What is CSMA/CD and CSMA/CA ?
- 10) What are the essential components of LAN ?
- 11) Define gateway.
- 12) Write any two goals of routing algorithm.



SECTION – B

II. Answer **any five** questions. **Each** question carries 5 marks.

(5×5=25)

- 13) Explain the types of transmission modes.
- 14) Differentiate between analog and digital transmission.
- 15) Explain frequency division multiplexing.
- 16) Write a note on sliding window.
- 17) Explain datagram and virtual circuits.

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- 18) Describe FDDI.
- 19) Write a note on the following devices :
- i) Bridge
 - ii) Router
- 20) What is a MODEM ? Explain its types.

SECTION – C

- III. Answer **any three** questions. **Each** question carries **15** marks. **(3×15=45)**
- 21) a) Explain OSI reference model with a neat diagram. **8**
 b) Explain pulse code modulation. **7**
- 22) a) Explain SONET multiplexing. **8**
 b) What is Hamming code ? Calculate the sender side Hamming code for the data 1110101. **7**
- 23) a) Explain Stop and Wait ARQ in detail. **8**
 b) Explain optical fiber. **5**
 c) Define TELNET. **2**
- 24) a) Explain ALOHA protocols. **8**
 b) Explain IEEE 802.5 frame structure. **7**
- 25) Explain the following :
- a) Leaky Bucket algorithm. **8**
 - b) Bellman Ford algorithm. **7**

SECTION – D

- IV. Answer **any one** question. **Each** question carries **10** marks. **(1×10=10)**
- 26) What is topology ? Explain different types of topology. **10**
- 27) Explain the two sublayers of data link layer. **10**
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