



SA – 914

28  
IV Semester B.C.A. Degree Examination, April/May 2015  
( Y2K8 Scheme)

COMPUTER SCIENCE

BCA-404 : Data Communications and Networks  
(100 Marks - 2012-13 and Onwards/90 Marks - Prior to 2012-13)

Time : 3 Hours

Max. Marks : 90/100

- Instructions :** 1) Section **A, B** and **C** is common to **all**.  
2) Section **D** is applicable to **only** the students who have taken admission in **2012-2013** onwards.  
3) **100** marks for **fresh** students of **2012-2013** onwards. **90** marks for **repeater** students prior to **2012-13**.

SECTION – A

Answer **any 10** questions. **Each** question carries **two** marks.

(10×2=20)

1. What are the goals of computer network ?
2. Expand DNS and HTTP.
3. What are the various TCP/IP utilities ?
4. What is protocol ? Give example.
5. What is multiplexing ? What are the types of multiplexing ?
6. What is the difference between bit interval and bit rate ?
7. What is Nyquist signalling rate for a noiseless channel ?
8. What is piggy backing ?
9. What is the need for framing ?
10. What is channelization methods ?
11. What are the types of bridges ?
12. What is a repeater ?

SECTION – B

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

(5×5=25)

13. List the essential elements of network architecture ? Explain.
14. Explain architecture of Telnet.
15. Explain Shannon channel capacity for a noisy channel.

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16. Compare analog and digital transmission.
17. Explain PPP phase diagram.
18. Explain the difference between FDMA and CDMA.
19. Write a short note on FDDI.
20. Write about packet switched network.

## SECTION – C

Answer **any 3** questions. **Each** question carries **15** marks.

(15×3=45)

21. a) What are the three different transmission modes ? Explain. 7
- b) Explain TCP/IP model with a diagram. 8
22. a) Explain unguided medium/wireless medium. 7
- b) Write short notes :
  - a) Hamming code
  - b) CRC. 8
23. Explain in detail the following CSMA protocols :
  - a) 1-persistent
  - b) Non-persistent
  - c) P-persistent. (5+5+5)
24. Explain Go-Back-N-ARQ. 15
25. a) Explain the working of frame format of token ring. 8
- b) Write short notes :
  - i) Shortest path algorithm
  - ii) Distance vector algorithm. 7

## SECTION – D

Answer **any one** question. It is **applicable** for the students who have taken admission in **2012-13** onwards.

(10×1=10)

26. Explain OSI reference model with neat diagram. 10
27. Write short notes on :
  - a) Congestion control
  - b) Routers. (5+5)