

B. Sc. DEGREE END SEMESTER EXAMINATION OCTOBER 2018**SEMESTER 3 : B. Sc COMPUTER APPLICATIONS (CORE COURSE)****COURSE: 15U3CRCAP05 - DATA COMMUNICATION AND COMPUTER NETWORKS***(For Regular - 2017 Admission and Supplementary / Improvement 2016, 2015 Admissions)*

Time: Three Hours

Max Marks: 75

PART A**(Answer *all* questions. Each question carries 1 mark)**

1. Which are the key elements of a protocol?
2. Define data communication
3. Which are the four fundamental characteristics of data communication system?
4. Which are the different forms of data representation?
5. Define simplex mode. Give an example.
6. A network must be able to meet certain number of criteria which are the three criteria?
7. How does information get passed from one layer to the next in the Internet model?
8. Name three types of transmission impairment.
9. Define Distortion
10. We send a digital signal from one station on a LAN to another station. Is this baseband or broadband transmission? (1 x 10 = 10)

PART B**(Answer *any eight* questions. Each question carries 2 marks)**

11. What are periodic and non-periodic Signals?
12. List one difference between network layer delivery and transport layer delivery?
13. A device is sending out data at the rate of 1000 bps.
 - a. How long does it take to send out 10 bits?
 - b. How long does it take to send out a single character (8 bits)?
14. Data rate depends on three factors. Which are they?
15. What is Propagation Time?
16. List down any two advantages and disadvantages of *Optical Fiber*
17. What are the two approaches to packet-switching?
18. How do guided media differ from unguided media?
19. Define switched network.
20. What is Jitter? (2 x 8 = 16)

PART C

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

21. Explain the five components of data communication system
22. Explain full duplex mode.
23. Explain point to point and multipoint connection.
24. What is the difference between a port address, a logical address, and a physical address?
25. Suppose a computer sends a frame to another computer on a bus topology LAN. The physical destination address of the frame is corrupted during the transmission. What happens to the frame? How can the sender be informed about the situation?
26. What is Multiple-Slot multiplexing?
27. Explain unguided transmission medias.

(5 x 5 = 25)

PART D

(Answer **any two** questions. Each question carries **12** marks)

28. Explain the following network topologies with its advantages & disadvantages.
 - a. Bus
 - b. Ring
 - c. Star
29. Explain the different data transmission modes.
30. Explain multiplexing. Which are the different categories of multiplexing?
31. Explain taxonomy of switched networks.

(12 x 2 = 24)
