

(6 pages)

Reg. No. : .....

Code No.: 20103 E      Sub. Code : SMCS 52/  
SMSE 52/AMCS 52

B.Sc. (CBCS) DEGREE EXAMINATION,  
NOVEMBER 2022.

Fifth Semester

Computer Science/Software Engineering – Core

DATA COMMUNICATION AND  
COMPUTER NETWORK

(For those who joined in July 2017 onwards)

Time : Three hours                      Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Transmission data rate is decided by  
(a) network layer      (b) physical layer  
(c) data link layer      (d) transport layer

2. The \_\_\_\_\_ duplex mode, the signal is sent in both directions at the same time.  
(a) Half  
(b) Simple  
(c) Full  
(d) None of the mentioned
3. Coaxial cable has conductors with \_\_\_\_\_  
(a) a common axis      (b) equal resistance  
(c) the same diameter      (d) none of these
4. The physical layer is responsible for  
(a) line coding      (b) channel coding  
(c) modulation      (d) all of the mentioned
5. Which of the following is not a phase of virtual circuit network?  
(a) Setup phase      (b) Data transfer phase  
(c) Termination phase      (d) Teardown phase
6. The signal rate is the number signal elements sent in \_\_\_\_\_s.  
(a) 1                      (b) 2  
(c) 0                      (d) 4

7. The data link layer takes the packets from \_\_\_\_\_ and encapsulates them into frames for transmissions.

- (a) network layer      (b) physical layer  
(c) transport layer    (d) application layer

8. Which one of the following is a data link protocol?

- (a) ethernet  
(b) point to point protocol  
(c) hdlc  
(d) all of the mentioned

9. In wireless ad-hoc network

- (a) access point is not required  
(b) access point is must  
(c) nodes are not required  
(d) none of the mentioned

10. Which multiple access technique is used by IEEE 802.11 standard for wireless LAN?

- (a) CDMA  
(b) CSMA/CA  
(c) ALOHA  
(d) None of the mentioned

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).  
Each answer should not exceed 250 words.

11. (a) Write about the addressing.

Or

(b) Why are protocols and standards needed?

12. (a) What does the Nyquist theorem have to do with communication?

Or

(b) Write in detail about time and frequency domains.

13. (a) Explain about packet switch network.

Or

(b) What is dial-up modem technology?

14. (a) Explain stop and wait protocol.

Or

(b) What is hamming distance?

15. (a) Explain IEEE 802.11 architecture.

Or

(b) What is the minimum size of a UDP datagram?

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)  
Each answer should not exceed 600 words.

16. (a) Discuss in detail about OSI layers with neat diagram.

Or

(b) What is an internet? What is an intranet?

17. (a) What does the Shannon capacity have to do with communications?

Or

(b) With neat diagram explain about Guided media.

18. (a) List four major components of a packet switch and their functions.

Or

(b) What is LATA? What are intra-LATA and inter-LATA services?

19. (a) What kind of error is undetectable by checksum?

Or

(b) Discuss the concept of redundancy in error detection.

20. (a) Write in details about Sliding window protocols.

Or

(b) Explain in details about need of IPv6.