

B.C.A. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023

Sixth Semester

Computer Application – Core

COMPUTER NETWORKS

(For those who joined in July 2017–2020 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer:

1. In computer network nodes are _____.
- (a) the computer that originates the data
(b) the computer that routes the data
(c) the computer that terminates the data
(d) all of the mentioned

2. The number of layers in ISO OSI reference model is _____.
- (a) 5 (b) 7
(c) 6 (d) 10
3. The physical layer is concerned with _____.
- (a) bit-by-bit delivery
(b) process to process delivery
(c) application to application delivery
(d) port to port delivery
4. Transmission Media is classified as _____.
- (a) Un-Guided (b) Guided
(c) Direct (d) (a) and (b)
5. A pure ALOHA network transmits 200-bit frames on a shared channel of 200 kbps. What is the requirement to make this frame collision-free?
- (a) 2 msec (b) 4 msec
(c) 2 sec (d) 4 sec
6. Ethernet frame consists of _____.
- (a) MAC address (b) IP address
(c) Default mask (d) Network address

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7. Which of the following routing algorithms can be used for network layer design?
- (a) Shortest path algorithm
(b) Distance vector routing
(c) Link state routing
(d) All of the mentioned
8. Which of the following are transport layer protocols used in networking?
- (a) TCP and FTP (b) UDP and HTTP
(c) TCP and UDP (d) HTTP and FTP
9. Which is not a application layer protocol?
- (a) HTTP (b) SMTP
(c) FTP (d) TCP
10. In cryptography, the order of the letters in a message is rearranged by _____.
- (a) transpositional ciphers
(b) substitution ciphers
(c) both transpositional ciphers and substitution ciphers
(d) quadratic ciphers

PART B — (5 × 5 = 25 marks)

Answer ALL the questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Mention the features of LAN, MAN, WAN.
Or
(b) Compare TCP/IP and OSI reference model.
12. (a) Express about electromagnetic spectrum.
Or
(b) Write about light transmission.
13. (a) Describe sliding window protocol using Go back n.
Or
(b) Depict the Bluetooth architecture and protocol stack.
14. (a) What is routing algorithm? Explain.
Or
(b) Brief note on Traffic-aware Routing.

15 (a) Describe transposition cipher model.

Or

(b) Write about RSA algorithm.

PART C — (5 × 8 = 40 marks)

Answer ALL the questions, by choosing either (a) or (b).

Each answer should not exceed 600 words.

16 (a) Elucidate the protocol hierarchies in network software.

Or

(b) Illustrate TCP/IP reference model with neat diagram.

17 (a) Explain :

(i) co-axial cable

(ii) fiber-optic cable

Or

(b) Elaborate Geostationary satellites.

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18 (a) Express in detail about error correcting code
Or

(b) Illustrate elementary data link layer protocols.

19 (a) Illustrate two types of ALOHA
Or

(b) Explain any two types of Ethernet.

20 (a) Explain Caesar cipher method.
Or

(b) Write in detail about digital signature.

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