BCA/4/CC/21

Student's Copy

Professional Course Examination, May 2024

(CBCS)

(4th Semester)

BACHELOR OF COMPUTER APPLICATIONS

(Computer Networking-I)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

(PART : A-OBJECTIVE)

(Marks : 25)

SECTION-I

(Marks: 15)

A. Tick (1) the correct answer in the brackets provided : 1×10=10

198.2.2.1 IP address belongs to which IP class?

)

- (a) Class A ()
- (b) Class B (
- (c) Class C ()
- (d) Class D ()
- 2. Which one of the following network devices connects two networks?
 - (a) Bridge ()
 - (b) Hub ()
 - (c) Repeater ()
 - (d) Gateway ()

- 3. Which of the following topologies provides highly fault tolerant architecture?
 - (a) Star ()
 - (b) Bus ()
 - (c) Ring ()
 - (d) Mesh ()

_____ refers to the loss of signal strength.

- (a) Attenuation () (b) Distortion ()
- (b) Distortion ()
- (c) Noise ()
- (d) Crosstalk ()

5. One of the benefits of encasing a twisted-pair cable is the

- (a) reduction of crosstalk ()
- (b) reduction of noise ()
- (c) increase in flexibility ()
- (d) decrease in costs ()
- 6. How many bits are required to encode 64-level PCM?
 - (a) 7 ()
 (b) 6 ()
 (c) 5 ()
 (d) 4 ()
- The difference between the corresponding bits in two code words is called
 - (a) Hamming distance ()
 - (b) Hamming code ()
 - (c) bit stuffing ()
 - (d) byte stuffing ()

- 8. Four bits are used for packet sequence number in sliding window protocol. What is the maximum window size?
 - (a) 4 ()
 - (b) 8 ()
 - (c) 15 ()
 - (d) 16 ()
- 9. The header length of IPv6 is
 - (a) 16 ()
 - (b) 30 ()
 - (c) 32 ()
 - (d) 40 ()
- 10. Which layer in the IEEE 802.11 protocol stack has the function of flow control and error control?
 - (a) Physical layer ()
 - (b) Logical link control layer ()
 - (c) Medium access layer ()
 - (d) None of the above ()
- **B.** State whether the following statements are *True* or *False* : 1×5=5
 - POP3 is the protocol used to receive Email.

(T / F)

- 2. Telnet allows user to connect client machine.
- (T / F)
- 3. In link-state routing, the updating packets are sent periodically.
 - (T / F)

- 4. Analog signal is discrete in nature.
 - (T / F)
- 5. Radio waves are omnidirectional.

(T / F)

SECTION-II

(Marks: 10)

C. Answer the following questions :

1. (a) What is the main function of switch?

OR

(b) Explain ring topology.

2. (a) Explain the working of coaxial cable.

OR

(b) Explain circuit switching.

3. (a) Explain parity in context of error detection.

OR

(b) Explain jitter for flow control.

(a) Explain IPv6 address in brief.

OR

- (b) What is flooding in the context of data routing?
- 5. (a) What is telnet?

OR

(b) Explain FTP in brief.

(PART : B-DESCRIPTIVE)

(Marks : 50)

D. Answer the following questions :

- 1. (a) Explain different types of network based on their coverage area. 6
 - (b) Explain the working of modem.

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4

10×5=50

OR

2.	(a) Explain TCP/IP protocol suit with appropriate diagram.	7		
	(b) What are transmission impairments?	3		
3.	(a) Explain amplitude-shift keying.	5		
	(b) Explain frequency-shift keying.	5		
OR				
4.	Explain FDM, WDM and TDM with appropriate diagrams.	10		
5.	(a) Explain cyclic redundancy check.	5		
	(b) If dataframe is 1101011011 and generator is 10011, what will be the checksum frame if encoded in CRC?	5		
OR				
6.	(a) Explain Hamming code for error detection.	5		
	(b) If dataframe is 10001001, what will be the transmitted frame after encoded with Hamming code with even parity?	5		
7.	Explain Stop-and-Wait ARQ with suitable figure. Also explain how it handles damaged frame, lost frame and lost acknowledgement.	10		
OR				
8.	Explain Go-Back-N ARQ. Also explain how it handles damaged frame and damage RR (receive ready).	10		
9.	(a) Explain UPD protocol with header diagram.	6		
	(b) Explain distance-vector routing.	4		
OR				
10	(a) Explain the specification and working of 100BaseX ethernet.(b) Explain the working of DNS.	5 5		

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(Marks: 25)

SECTION-I

(Marks: 15)

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[Contd.

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4. (a) Explain IPv6 address in brief.

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(PART : B-DESCRIPTIVE)

(Marks : 50)

D. Answer the following questions :

(a) Explain different types of network based on their coverage area.
 (b) Explain the working of modem.

2×5=10

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10×5=50

OR

2.	(a) Explain TCP/IP protocol suit with appropriate diagram.	7		
	(b) What are transmission impairments?	3		
3.	(a) Explain amplitude-shift keying.	5		
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