

Enrollment No.....



Faculty of Engineering / Science

End Sem (Odd) Examination Dec-2019

CA3CO10 Computer Networks

Programme: BCA-MCA  
(Integrated) / BCABranch/Specialisation: Computer  
Application**Duration: 3 Hrs.****Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. The first Network 1  
(a) CNNET (b) NSFNET (c) ASAPNET (d) ARPANET
- ii. In TCP IP Model, when data is sent from device A to device B, the 5th layer to receive data at B is 1  
(a) Application layer (b) Transport layer  
(c) Link layer (d) Session layer
- iii. Bits can be sent over guided and unguided media as analog signal by 1  
(a) Digital modulation (b) Amplitude modulation  
(c) Frequency modulation (d) Phase modulation
- iv. The physical layer concerns with 1  
(a) Process to process delivery  
(b) Application to application delivery  
(c) Bit-by-bit delivery  
(d) None of these
- v. Which sublayer of the data link layer performs data link functions that depend upon the type of medium? 1  
(a) Logical link control sublayer  
(b) Media access control sublayer  
(c) Network interface control sublayer  
(d) None of these
- vi. The technique of temporarily delaying outgoing acknowledgements so that they can be hooked onto the next outgoing data frame is called 1  
(a) Piggybacking (b) Cyclic redundancy check  
(c) Fletcher's checksum (d) None of these

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- vii. The size of IP address in IPv6 is **1**  
(a) 4 bytes (b) 128 bits (c) 8 bytes (d) 100 bits
- viii. In Multicast Routing Protocol, flooding is used to broadcast packets, but it creates **1**  
(a) Gaps (b) Loops (c) Holes (d) Links
- ix. User datagram protocol is called connectionless because **1**  
(a) It sends data as a stream of related packets  
(b) All UDP packets are treated independently by transport layer  
(c) It is received in the same order as sent order  
(d) None of these
- x. A web cookie is a small piece of data **1**  
(a) Sent from user and stored in the server while a user is browsing a website  
(b) Sent from root server to all servers  
(c) Sent from a website and stored in user's web browser while a user is browsing a website  
(d) None of these

- Q.2 Attempt any two:
- i. Explain TCP/IP reference model. Briefly describe the role of TCP/IP protocol in Internet. **5**
  - ii. Explain LAN, MAN, WAN & PAN with examples. **5**
  - iii. What is the need of layered architecture? Explain. Also write the advantages of layered architecture. **5**

- Q.3 Attempt any two:
- i. Explain basic working principle of optical fiber cable. Explain single mode & multimode fiber. **5**
  - ii. Explain packet switching & circuit switching methods. **5**
  - iii. Briefly describe: **5**  
(a) Microwave Transmission (b) Light Transmission

- Q.4 Attempt any two:
- i. What do mean by framing? Explain any two framing techniques. **5**
  - ii. Explain the working of slotted ALOHA. Also calculate its throughput. **5**

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- iii. Explain the working of Selective Repeat ARQ with the help of diagram. **5**

- Q.5 Attempt any two:
- i. What is Routing? Explain any one routing algorithm in detail. **5**
  - ii. Why congestion occurs in networks? Explain back pressure & choke packet congestion control approaches. **5**
  - iii. Explain the following: **5**  
(a) Connection-oriented services & Connectionless services  
(b) Types of IPv6 addresses with its address format

- Q.6 Attempt any two:
- i. Explain services provided by transport layer & application layer. **5**
  - ii. What is cryptography? Explain public key & private key cryptography. **5**
  - iii. Explain SMTP & HTTP protocols in detail. **5**

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## Marking Scheme

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Q.1	i.	The first Network (d) ARPANET	1
	ii.	In TCP IP Model, when data is sent from device A to device B, the 5th layer to receive data at B is (a) Application layer	1
	iii.	Bits can be sent over guided and unguided media as analog signal by (a) Digital modulation	1
	iv.	The physical layer concerns with (c) Bit-by-bit delivery	1
	v.	Which sublayer of the data link layer performs data link functions that depend upon the type of medium? (b) Media access control sublayer	1
	vi.	The technique of temporarily delaying outgoing acknowledgements so that they can be hooked onto the next outgoing data frame is called (a) Piggybacking	1
	vii.	The size of IP address in IPv6 is (b) 128 bits	1
	viii.	In Multicast Routing Protocol, flooding is used to broadcast packets, but it creates (b) Loops	1
	ix.	User datagram protocol is called connectionless because (b) All UDP packets are treated independently by transport layer	1
	x.	A web cookie is a small piece of data (c) Sent from a website and stored in user's web browser while a user is browsing a website	1

Q.2	Attempt any two:		
	i.	TCP/IP reference model Role of TCP/IP protocol in Internet	3 marks 2 marks
	ii.	Explain LAN, MAN, WAN & PAN with examples 1.25 marks for each	(1.25 marks * 4)
	iii.	Need of layered architecture Advantages of layered architecture	3 marks 2 marks

Q.3 Attempt any two:

	i.	Description of principle of optical fiber cable	2 marks	<b>5</b>
		Description of single mode & multimode fiber	3 marks	
	ii.	Description of packet switching methods	2.5 marks	<b>5</b>
		Description of circuit switching methods.	2.5 marks	
	iii.	Briefly describe:		<b>5</b>
		(a) Microwave Transmission	2.5 marks	
		(b) Light Transmission	2.5 marks	

Q.4	Attempt any two:			
	i.	Description of framing	1 mark	<b>5</b>
		Any two framing techniques	4 marks	
	ii.	Description of slotted ALOHA	2 marks	<b>5</b>
		Calculate its throughput	3 marks	
	iii.	Description of Selective Repeat ARQ	4 marks	<b>5</b>
		Diagram	1 mark	

Q.5	Attempt any two:			
	i.	Routing	2 marks	5
		Any one routing algorithm	3 marks	
	ii.	Why congestion occurs in networks	2 marks	5
		Back pressure & choke packet	3 marks	
	iii.	Explain the following:		5
		(a) Connection-oriented services & Connectionless services	2.5 marks	
	(b) Types of IPv6 addresses with its address format	2.5 marks		

Q.6	Attempt any two:			
	i.	Description of transport layer	2.5 marks	<b>5</b>
		Description of application layer	2.5 marks	
	ii.	Cryptography	1 mark	<b>5</b>
		Public key & private key cryptography	4 marks	
	iii.	Description of SMTP	2.5 marks	<b>5</b>
		Description of HTTP	2.5 marks	

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