

Enrollment No.....



Faculty of Engineering
End Sem (Odd) Examination Dec-2017
CA5CO12 Computer Networks

Programme: MCA Branch/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. Which layer links the network support layers and user support layers **1**
 (a) Session layer (b) Data link layer
 (c) Transport layer (d) Network layer
- ii. Which layer is responsible for process to process delivery? **1**
 (a) Network layer (b) Transport layer
 (c) Session layer (d) Data link layer
- iii. Which one of the following is not a function of data link layer? **1**
 (a) Routing (b) Inter-networking
 (c) Congestion control (d) None of these
- iv. Header of a frame generally contains **1**
 (a) Synchronization bytes (b) Addresses
 (c) Frame identifier (d) All of these
- v. A system with 8-bit addresses has address space of **1**
 (a) 32 (b) 256 (c) 720 (d) 65535
- vi. In IPv4 addresses, classful addressing is replaced with **1**
 (a) Classless Addressing (b) Classful Addressing new version
 (c) Classful Advertising (d) Classless Advertising
- vii. In transport layer, a message is normally divided into transmittable **1**
 (a) Segments (b) Signals (c) Networks (d) Frames
- viii. A connectionless protocol treats each segment **1**
 (a) Freely (b) Independently
 (c) Separately (d) Dependently
- ix. This is not a application layer protocol **1**
 (a) HTTP (b) SMTP (c) FTP (d) TCP

- x. The packet of information at the application layer is called **1**
 (a) Packet (b) Message (c) Segment (d) Frame
- Q.2 i. What are the three criteria necessary for an effective and efficient network? **3**
 ii. Write a short note on various types of transmission media, highlighting their merits and demerits? **7**
- OR iii. How does Asynchronous Transfer Mode (ATM) work? **7**
- Q.3 i. What are header and trailers and how do they get added and removed? **3**
 ii. Is there any relationship between transmission media and topology? What is the remainder obtained by dividing $x^7 + x^5 + 1$ by the generator polynomial $x^3 + 1$? **7**
- OR iii. Explain the difference between pure and slotted aloha. Derive the throughput of slotted aloha is doubled of pure aloha. **7**
- Q.4 i. Write the keys for understanding the link state routing? **2**
 ii. What are the features in OSPF? **3**
 iii. State at least five differences between RIP and OSPF. **5**
- OR iv. Explain IP in detail. **5**
- Q.5 i. What is the difference between service point address, logical address and physical address? **4**
 ii. Explain the three way handshake protocol to establish the transport level connection. **6**
- OR iii. Compare TCP and UDP with neat and clean diagram. **6**
- Q.6 Attempt any two:
 i. What are the advantages & disadvantages of public key encryption? Name four factors needed for a secure network? **5**
 ii. Explain the design issues of application layer. Write only name of any seven protocol which work on application layer. **5**
 iii. Explain RSA key generation algorithm with suitable example. **5**

CA5CO12 Computer Networks
Marking Scheme

Q.1	i.	Answer: (c)	1				
	ii.	Answer: (b)	1				
	iii.	Answer: (d)	1				
	iv.	Answer: (d)	1				
	v.	Answer: (b)	1				
	vi.	Answer: (a)	1				
	vii.	Answer: (a)	1				
	viii.	Answer: (c)	1				
	ix.	Answer: (d)	1				
	x.	Answer. (b)	1				
Q.2	i.	There are three points:(1) performance (2) reliability (3) security - 1 mark each	3				
	ii.	Explanation of Guided media with diagram(5marks)+ Explanation of unguided media(2 marks)	7				
	iii.	Explanation with diagram(3.5 marks +3.5 marks)	7				
Q.3	i.	What are header and trailers and how do they get added and removed? (2+1)Marks	3				
	ii.	Is there any relationship between transmission media and topology? What is the remainder obtained by dividing $x^7 + x^5 + 1$ by the generator polynomial $x^3 + 1$? (3+4)Marks	7				
OR	iii.	Explain the difference between pure and slotted aloha. Derive the throughput of slotted aloha is doubled of pure aloha. (3+4)Marks	7				
Q.4	i.	The three keys for understanding the algorithm are, <ul style="list-style-type: none"> • Knowledge about the neighborhood. • Routing to all neighbors. • Information sharing when there is a range. 	2				
	ii.	<ul style="list-style-type: none"> • Authentication of routing messages. • Additional hierarchy. • Load balancing. 	3				
	iii.	State at least five differences between RIP and OSPF - 5 Marks	5				
OR	iv.	Explanation 3 Marks+Diagram2 Marks	5				
Q.5	i.	Explanation of Port address+ Physical address +Logical address	4				
	ii.	Explanation with diagram(4 marks +2 marks)	6				
OR	iii.	Comparison (4Marks) +diagram(2marks)	6				
Q.6		Attempt any two:					
	i.	What are the advantages & disadvantages of public key encryption? Name four factors needed for a secure network? (3+2Marks)	5				
	ii.	Explain the design issues of application layer. Write only name of any seven protocol which work on application layer. (3+2Marks)	5				
	iii.	Explain RSA key generation algorithm with suitable example. (5 marks)	5				
