

JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination (Backlog), Nov-Dec 2018

B. Tech/ M. Tech (as applicable) in Computer Science & Engineering, Semester V

Roll No.....

COURSE CODE: CSE 503

Time: 3 hours

Max. Marks: 100

COURSE TITLE: Computer Networks

Instructions to students:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever required and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.

Q.1A	Objective type multiple choice questions (10 questions @ 1 mark)	10
i.	In OSI model error and flow control between nodes are responsibilities of? (a) Session Layer (b) Network Layer (c) Transport Layer (d) Data Link Layer	
ii.	Which multiplexing technique do not transmits empty slots? (a) FDM (b) Synchronous TDM (c) Asynchronous TDM (d) b and c	
iii.	IEEE project 802 divides the data link layer into a lower _____ sublayer and an upper _____ sublayer. (a) LLC,MAC (b) MAC,LLC (c) PDU,HDLC (d) HDLC,PDU	
iv.	If the ASCII character H is sent and the character I is received, what type of error is this? (a) Single bit (b) Multiple bit (c) Burst (d) Recoverable	
v.	Which error detection method uses polynomial arithmetic? (a) VRC (b) CRC (c) LRC (d) Checksum	
vi.	In an optical fiber, the cladding is _____ the inner core. (a) More dense than (b) Less dense than (c) the same density as (d) another name for	
vii.	Which topology features a central hub concept?	

	(a) Mesh (b) Ring (c) Star (d) All of the above	
Viii	In a network with 250 computers, which topology would require the most extensive cabling? (a) Mesh (b) Star (c) Bus (d) Ring	
ix.	Another term for CSMA/CD and the IEEE 802.3 standard is (a) Ethernet. (b) Token Ring (c) FDDI (d) Token Bus	
x.	In _____, each packet of a message follow the same path from sender to receiver. (a) Circuit switching (b) Virtual circuit approach (c) Message Switching (d) Datagram approach	
Q.2	Short answer type questions (4 questions @ 2.5 marks)	10
a)	Why there should be less collision in slotted ALOHA as compared to PURE ALOHA?	
b)	Identify the function of SMI and MIB in Simple Network Management Protocol (SNMP).	
c)	Differentiate between mono alphabetic and polyalphabetic substitution method of data encryption with example.	
d)	Explain the significance of IDENTIFICATION and FRAGMENTION OFFSET field in IPV4 datagram format.	
Q.3A	Given an IP address in decimal-dotted notation, how can its class be determined? Explain with suitable example.	05
Q.3B	Find the network address of the following IP addresses: a) 114.34.2.8 b) 226.7.34.5	05
Q.4A	Consider the Optical fibre as the transmission media and explain different modes of optical fibre with the help of suitable diagram.	05
Q.4B	ACK 7 has been received by the sender in a Selective Reject sliding window system. Now frames 7,0,1,2 and 3 are sent. For each of the following scenarios, discuss the significance of the receiving of a) An NACK 1. b) An NACK 3. c) An ACK 3.	05

Q.5A	Write short notes on : a) MIME b) HTTP	05
Q.5B	Using suitable example, discuss the concept of inverse domain in Domain Name System(DNS) protocol.	05
Q.6A	Construct the Hamming code for the bit sequence 10011101 and explain the process of error correction performed with it.	05
Q.6B	Discuss the concept of window management in TCP. Explain the differences between TCP and UDP protocol.	05
OR		
Q.6B	An early secret key encryption method called mono alphabetic substitution (or Caesar Cipher) was attributed to Julius Caesar. Each character in the plain text is shifted forward n characters; For example if n is 6, then character A is replaced by character G, character B by H, and so on. What is the encryption algorithm and what is the decryption algorithm?	05
Q.7A	With the help of event timing diagram, differentiate between Circuit switching, Datagram approach of Packet Switching and Virtual Circuit approach of Packet Switching.	05
Q.7B	In classful addressing how is an IP address in class A, Class B and Class C divided ? Given the address 23.64.7.91 and the default class A mask, find the beginning address (network address).	05
OR		
Q.7B	Given a 10 bit sequence 1011100101 and a divisor of type polynomial x^3+x+1 , find the CRC and also define the steps to be done at receiver end to detect the error.	05
Q.8A	During the communication, how various layers of OSI model exchange information to establish a connection? Describe with the help of suitable diagram.	10
Q.9A	Discuss network topologies in detail with their performance indicator. Also draw and show the hybrid topology with star as backbone and four ring network.	10
Q.9B	a) Explain how the packets are transmitted by using TCP approach. Explain in detail with the neat sketch. b) Explain the concept of congestion control in TCP.	10
OR		
Q.9B	a) Discuss connection establishment and connection release in TCP. b) Discuss how TCP provides reliability using error control.	10