KUMARAGURU college of technology
character is life

Register Number:……

M.E DEGREE EXAMINATIONS: JUNE 2018

(Regulation 2015)

Second Semester

COMPUTER SCIENCE AND ENGINEERING

P15CST203: Network Engineering and Management

COURSE OUTCOMES

CO1: Outline the basic concepts, standards and types of network

CO2: Explain the operations of various protocols in networks

CO3: Analyze algorithms for routing and congestion control

CO4: Develop client - server based applications.

CO5: Outline the basic concepts of network management

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Assertion (A): Data link layer regulates the flow of data so that slow receivers are not swapped by fast senders. CO2 [K_2]

   Reason (R): Flow control is a specific function of data link layer

   a) Both A and R are Individually true and R is the correct explanation of A
   b) Both A and R are Individually true but R is not the correct explanation of A
   c) A is true but R is false
   d) A is false but R is true

2. When a packet is sent from one router to another via one or more intermediate routers, the packet received at the intermediate routers are stored until the required output line is free, and then forwarded. A subnet organized according to this principle is called _____ CO2 [K_1]

   a) Switching- and- forwarding
   b) Store-and-forward
   c) Routing
   d) Forwarding

3. How long is an IPv6 address? CO1 [K_1]

   a) 32 bits
   b) 128 bytes
   c) 64 bits
   d) 128 bits

4. Match protocol its port number CO4 [K_2]

List I	List II
A. Telnet	i. 20, 21
B. Echo	ii. 80
C. FTP	iii. 7
D. HTTP	iv. 23

	A	B	C	D
a)	ii	i	iii	iv
b)	iii	iv	ii	i
c)	iv	iii	i	ii
d)	iii	i	ii	iv

5. Assertion (A): UDP is a connectionless and unreliable protocol CO2 [K_2]

Reason (R): It does not guarantee about arrival and sequencing

a) Both A and R are Individually true and R is the correct explanation of A
b) Both A and R are Individually true but R is not the correct explanation of A
c) A is true but R is false
d) A is false but R is true

6. Which of the following mechanisms is explicitly supported in IPv6 but not directly in IPv4 CO1 [K_2]

a) Unicast
b) Broadcast
c) Multicast
d) Anycast

7. Pick out the SNMP Manager's key functions CO5 [K_2]

1. Queries agents
2. Gets responses from agents
3. Collects management information about its local environment
4. Stores and retrieves management information as defined in the MIB.

a) 1,3
b) 1,4
c) 1,2
d) 2,3

8. The well known server port numbers are assigned by CO4 [K_2]

a) IETF
b) IANA
c) IEEE
d) ACM

9. SNMPv2 has a complex party-based security system while the _____ has a cryptographic security system CO5 [K_2]

a) SNMPv4
b) SNMPv3
c) SNMPv5
d) SNMPv6

10. Arrange the sequence of steps in Link state routing CO3 [K_2]

i) Discovering its neighbors

ii) Send the packets

iii) Computing shortest path

iv) Measure the delay

v) Construct a packet

a) i, v, iv, ii, iii b) i, iv, v, ii, iii

c) i, ii, iii, v, iv d) i, v, ii, iii, iv

PART B (10 x 2 = 20 Marks)

11. Explain the functions of Network layer. CO1 [K_2]
12. Define piggy backing. CO1 [K_1]
13. Explain the concept of Go Back N with its limitations. CO2 [K_1]
14. What are the steps followed in checksum generator? CO2 [K_2]
15. Explain DHCP. CO3 [K_2]
16. Why TCP is a reliable protocol compared to UDP? Discuss. CO3 [K_2]
17. Discuss the three main divisions of domain name space. CO4 [K_2]
18. Why is an protocol such as POP needed for electronic messaging? CO4 [K_2]
19. Compare SNMP and CMIP CO5 [K_2]
20. Explain the monitoring techniques for network management system. CO5 [K_2]

PART C (6 x 5 = 30 Marks)

21. Suppose you have to develop an error recovery protocol for a link that is unreliable & delay sensitive, which of the following protocol would you choose? CO1 [K_2]

    i) Stop & wait ii) Selective repeat iii) Go back N Justify your answer.

22. State the major difference between Distance Vector Routing and Link State Routing. Discuss how these routing techniques work. CO2 [K_2]
23. Analyze how address resolution is done in ARP and RARP protocols. CO2 [K_2]
24. Discuss resource records and name servers in DNS name space. CO4 [K_2]
25. Explain the functions of FTP protocol. CO4 [K_2]
26. Explain address structure and byte ordering functions of socket. CO5 [K_2]

Answer any FOUR Questions
PART D (4 x 10 = 40 Marks)

27.	How the data link layer ensures the flow control in modern computer networks. Explain with each method with suitable diagram.	CO2	[K_2]
28.	Explain the following routing techniques i) Hierarchical routing ii) Broadcast routing	CO3	[K_2]
29.	Explain TCP socket functions and write a TCP client and server socket program to send and receive message.	CO4	[K_3]
30.	Explain the message formats and message transfer protocols of electronic mail.	CO4	[K_2]
31.	Compare the SNMPv2 and SNMPv3.	CO5	[K_2]

****