Total No. of Questions : 10]

SEAT No. :

P1766

[Total No. of Pages : 3

[5460] - 596
T.E. (Information Technology)
COMPUTER NETWORK TECHNOLOGY
(2015 Pattern) (Semester - II)

Time : 2½ Hours] *[Max. Marks :70*

Instructions to the candidates:

1) ***Answers Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10.***

2) ***Neat diagrams must be drawn wherever necessary.***

3) ***Figures to the right side indicate full marks.***

4) ***Assume suitable data if necessary.***

Q1) a) An organization is granted the block 172.16.0.0/18. Design the network and **[6]**

i) Find how many subnets?

ii) Find how many hosts per subnet?

iii) Subnet mask

iv) What are the valid subnets?

v) What's the broadcast address for last subnet?

vi) What is the range of valid hosts in last subnet?

b) What is socket? Explain various socket primitives used in client server interaction. **[4]**

OR

Q2) a) What is FTP? Which ports does it use and for what purpose? Explain any 4 commands in FTP. **[6]**

b) Compare and contrast distance vector routing with link state routing. **[4]**

P.T.O.

Q3) a) What is the purpose of Leaky bucket and token bucket algorithms? Describe working of Token bucket algorithm with reference to CBR, VBR and bursty traffic. **[6]**

b) What is MIME? Explain the MIME header with suitable example. **[4]**

OR

Q4) a) What is PING? Explain with suitable example how PING works. **[6]**

b) Explain use of different timers in TCP. **[4]**

Q5) a) Explain the following corresponding to 802.11 MAC sublayer. **[8]**

i) Reliable data delivery

ii) Access control

b) Discuss the interference handling mechanism adopted in Bluetooth. List MAC layer specifications of IEEE 802.15.1. **[8]**

OR

Q6) a) Draw the various frequency bands in the electromagnetic spectrum? Explain why high frequency X rays and Gamma rays are not normally used for wireless communication. **[8]**

b) Explain in detail about IEEE 802.16 architecture. **[8]**

Q7) a) Differentiate between Infrastructure Network and Infrastructure - less Wireless Networks. What are the MAC layer and Routing Layer Design goals? **[8]**

b) Give classification of Transport layer solutions in adhoc wireless network. Explain operation of TCP - F. **[8]**

OR

Q8) a) Explain the connection establishment and data transfer phase in the following routing protocols with suitable diagram. **[8]**

i) AODV

ii) DSDV

CEGP013091 49.248.216.238 14/11/2018 09:41:43

b) What are the elements of sensor networks? Differentiate the MAC protocol of WSN from traditional wireless MAC protocol. **[8]**

Q9) a) What are the technical building blocks of Internet of Things? List the applications IoT. Explain any one in detail. **[10]**

b) What are the design issues in wireless sensor network. **[8]**

OR

Q10) a) What are the issues and challenges in Internet of Things? **[5]**

b) State the types of satellites and their advantages and disadvantages. **[5]**

c) Write short note on any two **[8]**

i) SDN

ii) Network Function Virtualization

iii) Net Neutrality

♦♦♦♦

CEGP013091 49.248.216.238 14/11/2018 09:41:43