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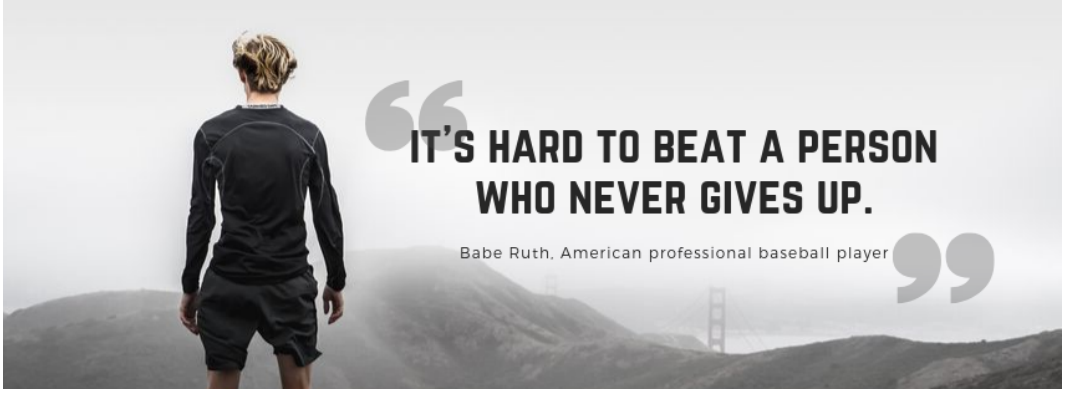

B.E. (Computer Science & Engineering) Seventh Semester (C.B.S.)

Elective - I : TCP & IP

P. Pages : 2 **NRJ/KW/17/4628**

Time : Three Hours * 0 9 3 6 * Max. Marks : 80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data whenever necessary.
10. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) What is RFC? Draw and define various maturity levels of RFC. **7**

b) Explain the different connecting devices with their OSI layer in which they operate. **6**

OR

2. a) Draw and explain TCP/IP protocol suite in detail. **7**

b) Give a classification of LAN and WAN in detail, also Differentiate between 802.3 and wireless LAN 802.11. **6**

3. a) Classify the following IP address. **4**

i) $208 \cdot 34 \cdot 54 \cdot 12$
ii) $129 \cdot 14 \cdot 6 \cdot 8$
iii) $242 \cdot 34 \cdot 2 \cdot 8$
iv) $238 \cdot 34 \cdot 2 \cdot 1$

b) Find the class of each address **4**

i) 00000001 00001011 00001011 11101111
ii) 11000010 10000011 11101111 11111111
iii) 10100111 11011011 10001011 01101111
iv) 11110011 10011011 11111011 00001111

c) In a block of addresses, the IP address of the host is $167 \cdot 199 \cdot 170 \cdot 82/27$ **6**
Find the numbers of addresses in network , the first address and Last address.

OR

4. a) An organisation is granted a block of addresses with the beginning address **8**
$14 \cdot 24 \cdot 74 \cdot 0/24$, the organisation needs to have 3 sub blocks of address to use in its three subnets as follows

i) One sub block of 120 addresses
ii) One sub block of 60 addresses
iii) One sub block of 10 addresses

Design subnet and draw network diagram.

b) Draw and explain in detail ARP packet format. **6**

5. a) List and explain the various packet forwarding techniques used by IP. **7**

b) An ICMP message has arrived with the header (in hexadecimal) **6**
05 00 11 12 11 0B 03 02
What is the type of the message?
What is the code?
What is the purpose of message?
What is the value of last 4 bytes?
What do the last bytes signify?

OR

6. a) Explain RIP routing protocol in detail. **7**

b) Explain the IP headers format in detail. **6**

7. a) Explain congestion control mechanism of TCP in detail. **7**

b) Explain the various services provided by TCP. **6**

OR

8. a) Explain in detail about TCP timers. **7**

b) Draw and explain state Transition diagram for TCP. **6**

9. a) Explain about LDP HELLO message. **7**

b) What is Traffic Engineering. Explain about peer entity and session in it. **6**

OR

10. Write a short note on **any three.** **13**
i) MPLS ii) ECMP
iii) SBR iv) Future development of TE
v) Signaling protocol.

11. a) Compare IPv4 and IPv6. **6**

b) Explain the transition from IPv4 to IPv6. **8**

OR

12. a) Explain IP sec internet security with their header format. **6**

b) Write a short notes **any two.** **8**
i) Autoconfiguration in IPv6 ii) ICMPv6
iii) QoS

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All our dreams can come true if we have the courage to pursue them.

~ Walt Disney