SRM Institute of Science and Technology
NCR campus Modinagar
Department of Computer Science and Engineering
CSE 6th Semester
Subjective Question Bank (Unit 2)

Subject: Network Routing Algorithms (18CSE453T)

Short Question

1. Define basic forwarding function.
2. List of basic forwarding function. Explain anyone in details.
3. Define router architecture explain in details with example.
4. Define router. What are the different types of routers ?
5. What do you mean by traffic manager and buffer manager in router architecture ?
6. Describe the working of router processor control.
7. What is packet context? Why is it necessary?.
8. What is the difference between a shared and switched backplane?
9. What are the strength and weakness of shared CPU architecture?
10. Write down the difference between forward look up and reverse look up?
11. What are the rules for longest prefix matching?
12. How the router implements the Longest Match ?
13. What is a root node?
14. What is a leaf node?
15. What is a binary search tree?
16. What is the principle of the mutibit trie?
17. Multibit Tries in Hardware scheme is based on the two key observations. Brief it.
18. What is the trade of in choosing the stride size in case of mutibit tries
19. Brief on the k-bit trie Performance and evaluation accounting the IPv4 addresses.
20. How longest prefix matching is achieved with binary searches on prefix lengths?
21. Explain the concept of marker and bmp in Binary Search on Prefix Lengths.
22. What are the basic intervals? How the look up is done for basic intervals with prefix range search?
23. Explain the logical units used to combine a I/O networking hardware system.
24. What is IEEE 802.3 standard?

25. Compare Pre-Processing Algorithms in brief.
26. Differentiate between Packet Flow and Packet Processing.
27. Explain the role of Router for Packet Routing.
28. Why do we need shortest path for candidate path caching?
29. Explain about the clustered architecture in detail.
30. Advantage and Disadvantage of clustered algorithm.

Long Question

31. Explain Routing table versus forwarding table in details.
32. Explain elements of routers from architectural point of view with the help of suitable diagram.
33. How is shared CPU architecture different from shared forwarding engine architecture?
34. What is the impact of addressing on lookup ? Explain in detail.
35. Proof: Consider an optimal path from some origin S to t and two vertices u and v on this path. They can coincide with some S or t or some node in the middle. Suppose there are some shorter path from u to v , then would be able to go from shortest path from s to t. If there were a shorter path from u to v we would get a shorter path from S to t.
36. Explain in detail the hardware approach in multi bit tries
37. Detail the Variable Stride Multibit Trie with an example
38. Draw a neat diagram for shared nothing architecture and explain in detail
39. Compare all Routing Algorithms in detail