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B.Tech. DEGREE EXAMINATION, MAY 2019
3rd to 8th Semester

15CS336E – NETWORK ROUTING ALGORITHMS

(For the candidates admitted during the academic year 2015 – 2016 to 2017 – 2018)

Note:

- (i) Part - A should be answered in OMR sheet within first 45 minutes and OMR sheet should be handed over to hall invigilator at the end of 45th minute.
- (ii) Part - B and Part - C should be answered in answer booklet.

Time: Three Hours

Max. Marks: 100

PART – A (20 × 1 = 20 Marks)

Answer ALL Questions

1. The class D addresses are used for
 (A) Broadcasting (B) Unicasting
 (C) Multicasting (D) Typecasting
2. The addressing form of transport layer is
 (A) Socket number (B) Port number
 (C) IP address (D) Destination address
3. Nodes in the public switched telephone network are called
 (A) Switches (B) Trunks
 (C) Trunk groups (D) Device
4. The data structures used by the router is known as
 (A) Routing table (B) Queue manager
 (C) Traffic manage (D) Route control processor
5. _____ provides connectivity of the network interfaces
 (A) Line cards (B) Control plane
 (C) Management plane (D) Back plane
6. The process of selectively identifying packets and applying certain rules is known as _____.
 (A) Packet queuing (B) Packet classification
 (C) Packet scheduling (D) Packet filtering
7. In _____ architecture, a CPU with memory and multiple line cards are connected by a shared backplane.
 (A) Clustered architecture (B) Shared nothing architecture
 (C) Shared CPU architecture (D) Shared forwarding engine architecture
8. _____ is a data structure that essentially serves as a scratch pad for carrying information between different stages of packet processing inside the router.
 (A) Packet context (B) Packet classifier
 (C) Forwarding table (D) Routing table

9. _____ algorithm used for finding the best matching prefix.
 (A) Bell-man ford algorithm (B) Dijkstra's algorithm
 (C) Naïve algorithms (D) Shortest path algorithm
10. _____ is the technique that refers to store a list of candidate paths at a node ahead of time
 (A) Route caching (B) Path caching
 (C) Packet caching (D) Data caching
11. _____ the widest path can be termed as
 (A) Longest matching prefix (B) Maximal residual capacity path
 (C) Best path (D) k-shortest path
12. The algorithm that computes shortest paths to all destination
 (A) k-shortest path algorithm (B) Spanning tree algorithm
 (C) Dijkstra's algorithm (D) Bellman ford algorithm
13. _____ are located in area 0 with connectivity to other autonomous systems.
 (A) Backbone router (B) As boundary router
 (C) Area border router (D) Internal router
14. _____ used to connect an area to the backbone using a non backbone area
 (A) Unicast links (B) Point-to-point links
 (C) Multipoint links (D) Virtual links
15. _____ is an distance of a link state protocol based on hop-by-hop communication of routing information
 (A) EIGRP (B) OSPF
 (C) IGRP (D) RIP
16. Super nodes of border gateway protocol are called as
 (A) Autonomous systems (B) Stab
 (C) Router (D) Backbone area
17. DSDV is based on _____ algorithm.
 (A) Bellman ford algorithm (B) Navies algorithm
 (C) Dijkstra's algorithm (D) K-path algorithm
18. In _____, a route is established only when it is required by a source node for transmitting data packets.
 (A) MANET (B) Adhoc networks
 (C) AODV (D) DSDV
19. _____ is a table driven protocol
 (A) SMTP (B) DSDV
 (C) BGP (D) FTP
20. The nodes in a adhoc wireless network contains _____ battery
 (A) Limited (B) Max
 (C) High (D) Low

PART – B (5 × 4 = 20 Marks)

Answer ANY FIVE Questions

21. Outline the importance of communication technologies.
22. Classify the types of routers.
23. Illustrate on naive algorithms.
24. Give a brief note on path compression.
25. Write a note on k shortest paths.
26. Compare distance vector routing and link state routing. Give one example.
27. Give a brief note on dynamic source routing.

PART – C (5 × 12 = 60 Marks)

Answer ALL Questions

28. a. Derive protocol stack architecture with neat sketch.
 (OR)
 b. Explain about the various functions of router in detail.
29. a. Give a detail note on elements of Router with a neat sketch.
 (OR)
 b. Construct the shared CPU architecture with route caches and explain.
30. a. Explain about the widest path routing algorithms in detail.
 (OR)
 b. Enumerate on centralized approach of Dijkstra's shortest path first algorithm.
31. a. Compare IGRP and EIGRP with packet format.
 (OR)
 b. Narrate on
 (i) OSPF packet common header
 (ii) OSPF hello packet
32. a. Elaborate on 'Adhoc on demand distance vector routing' protocol in detail.
 (OR)
 b. Analyze the behaviour of 'Destination sequenced distance vector' with an example.

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