Reg. No.														

B.Tech. DEGREE EXAMINATION, MAY 2018
1st to 6th Semester

15CS336E – NETWORK ROUTING ALGORITHMS
(For the candidates admitted during the academic year 2015 – 2016 onwards)

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. Reliable transport layer protocol are known as
   (A) UDP (B) TCP
   (C) IP (D) SNMP

2. The three different planes in network management architecture are
   (A) Management, control, data plane (B) Master, control, router plane
   (C) High level, control, data plane (D) Management, sequential, data plane

3. The packet forwarding performs which function to determine the appropriate outgoing link
   (A) Sequential function (B) Discrete function
   (C) Lookup function (D) Parallel function

4. The maximum size of the packet to be transmitted in the network is
   (A) 500 bytes (B) 1000 bytes
   (C) 1500 bytes (D) 2000 bytes

5. The scheduling algorithm is managed by
   (A) Traffic manager (B) Queue manager
   (C) Buffer manager (D) Target manager

6. Routing table is the table maintained by the
   (A) Packet forwarding process (B) Route control process
   (C) Data control process (D) Link control process

7. The objective to reduce the search time and reduce the memory space is
   (A) Search and update operation (B) Search operation
   (C) Path compression (D) Path tracking

8. An attempt to allow more efficient use of IP address space and slow down the exponential growth of forwarding tables in router is
   (A) Classless interdomain routing (B) Classful interdomain routing
   (C) Classfull routing (D) Interdomain routing

9. The algorithm that computes shortest paths to all destinations is
   (A) Bellman ford algorithm (B) Dijikstra's algorithm
   (C) K-shortest path algorithm (D) Spanning tree algorithm

10. The caching refers to storing of a candidate path list at a node ahead of time is
   (A) Data caching (B) Router caching
   (C) Path caching (D) Packet caching

11. The two communication modes for exchanging routing information are
   (A) In-band and out-of-band (B) In-band and data-band
   (C) Packet-band and out-of-band (D) In-band and text-band

12. The protocol which is based on a distance vector protocol for computing shortest path is
   (A) RIP (B) OSPF
   (C) RTNR (D) MPLS

13. The size of the address family identifier in RIPv1 packet format is
   (A) 4 byte (B) 3 byte
   (C) 2 byte (D) 1 byte

14. The protocol developed to overcome the hop count limit and hop count metric of RIPv1 is
   (A) RIP (B) LSR
   (C) MST (D) IGRP

15. The routers that sit on the border between the backbone and the low-level area
   (A) Area-border router (B) Internal router
   (C) Backbone router (D) Boundary router

16. The network refers to connecting a pair of routers directly by interface/ link such as OC-3 is.
   (A) Broadcast network (B) Point-to-point network
   (C) Point-to-multipoint network (D) Non-broadcast network

17. In AODV, the packet broadcasts from the source node to its neighbour is
   (A) RPAC (B) ARPAC
   (C) RREQ (D) RREP

18. DSDV uses two types of packets to share its routing table content
   (A) Full dump and incremental packet (B) Half dump and decremental packet
   (C) Full dump and MSG pack (D) Half dump and MSG pack

19. Highly adaptive loop-free distributed routing algorithm is
   (A) TBRPF (B) TORA
   (C) ZRP (D) RR

20. The MAC protocol that allow only one sensor node to access the channel at any given time
   (A) Contention-based MAC protocol (B) Contention-free MAC protocol
   (C) Non-Contention protocol (D) Contentionless MAC protocol

PART – B (5 × 4 = 20 Marks)
Answer **ANY FIVE** Questions

21. Categorize the various communication technologies of network routing.

22. Classify the types of routers.

23. List the importance of network protocol analyzer.

24. Examine the various packet flow of a router.

25. Illustrate the shorter path communication in a network.

26. Compare IGRP with EIGRP.

27. Give a brief note on internet based MANET.

PART – C (5 × 12 = 60 Marks)
Answer **ALL** Questions

28. a. Derive OSI reference model with neat sketch.

(OR)

b. Illustrate the architecture of network management and explain in detail.

29. a. Construct the shared forwarding engine architecture using a switched back plane and explain.

(OR)

b. Elaborate on
   (i) Ingress packet forwarding
   (ii) Egress packet forwarding

30. a. Develop a specialized k-shortest path algorithm with an example.

(OR)

b. Illustrate on distributed approach of Dijkstra's shortest path first algorithm.

31. a. Construct the packet format of Interior Gateway Routing Protocol (IGRP).

(OR)

b.i. Categorize the various network types that belongs to OSPF.

ii. Classify routers of OSFP.

32. a. Explain the dynamic source routing protocol in detail.

(OR)

b. Discuss 'Adhoc on Demand Distance Vector routing' protocol in detail.

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