29. a.	Explain about BGP operations, BGP configuration and BGP decision process.	10	2	4	2
	(OR)				
b.	Elaborate the operation of IGRP and EIGRP.	10	2	4	2
30. a.	Discuss on Cluster-Head Gateway Switch Routing (CGSR) protocol with proper diagram.	10	1	5	1
	(OR)				
b.	Discus routing responsibilities to nodes in hierarchical state routing protocol.	10	1	5	1

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Reg. No.														

B.Tech. DEGREE EXAMINATION, MAY 2022
Fifth to Seventh Semester

11

18CSE453T – NETWORK ROUTING ALGORITHMS
(For the candidates admitted from the academic year 2018-2019 to 2019-2020)

Note:
(i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.
(ii) **Part - B** should be answered in answer booklet.

Time: 2½ Hours Max. Marks: 75

	Marks	BL	CO	PO

PART – A (25 × 1 = 25 Marks)
Answer **ALL** Questions

1. Time to live value is 14 then maximum number of hops to travel packet is 1 2 1 2
   (A) 13 (B) 14
   (C) 15 (D) 16

2. _____ is used for loop back purpose. 1 1 1 1
   (A) 127.0.0.0 (B) 127.0.0.1
   (C) 127.0.0.2 (D) 127.0.0.3

3. Consider the scenario where host A can talk to host C, while host B talks to Host D, which type of device support parallel communications? 1 1 1 1
   (A) Repeaters (B) Switches
   (C) Hubs (D) Bridges

4. What type of class addressing does 239.255.255.255 falls on? 1 1 1 1
   (A) Class A (B) Class B
   (C) Class C (D) Class D

5. Encryption done at _____ layer and process to process communication done at _____ layer in OSI model. 1 1 1 1
   (A) Session and presentation layer (B) Presentation and transport
   (C) Presentation and data link (D) Data link and transport

6. The recently accessed data are stored in the _____ buffer. 1 1 2 1
   (A) Router (B) Router processor control
   (C) Traffic manager (D) Cache

7. _____ shapes the outgoing traffic to the subscriber according to the service level agreement. 1 1 2 1
   (A) Queue manager (B) Traffic manager
   (C) Forwarding engine (D) Route control processor

8. The alternate name of longest matching prefix is 1 1 2 1
   (A) Best matching prefix (B) Disjoint prefix
   (C) Binary trie (D) Multibit trie

9. _____ is used by service providers for interconnecting a few thousand small networks. 1 1 2 4
   (A) Core router (B) Edge router
   (C) Enterprise router (D) Access router

10. The information stored in the forwarding table is _____. 1 2 2 3
   (A) Address look up (B) Next hop information
   (C) IP address space (D) Router information

11. Widest path algorithms can be identified as 1 2 3 2
   (A) Non-additive shortest path algorithm (B) Additive shortest path algorithm
   (C) Best path algorithm (D) Multiplicative path algorithm

12. The complexity of Dijkstra's algorithm to find the shortest path to all destinations 1 3 3 2
   (A) $O(N^2)$ (B) O(N)
   (C) $O(N^3)$ (D) O(LN)

13. Select the component which contain the traffic costs on Dijkstra's shortest path algorithm 1 2 2 3
   (A) Nodes (B) Edges
   (C) Weights (D) Bus

14. The overall distance of a path is computed by adding a cost of a link to the cost of the next link along a path until all links for the path are considered as 1 2 3 1
   (A) Non-additive property (B) Additive property
   (C) Commutative property (D) Convergence property

15. The information initialization is achieved by the path vector routing protocol by using 1 1 3 2
   (A) 2 way handshake (B) Hello protocol
   (C) 3 way handshake (D) Request packet

16. If a link or an interface card is likely to fail, RIP V1 faces serious transient issues including possibility of creating 1 2 4 1
   (A) Brown hole routes (B) Red hole routes
   (C) While hole routes (D) Black hole routes

17. RIP V2 has been extended four use with IPv6 addressing known as _____. 1 1 4 1
   (A) RIP ng1 (B) RIP ng12
   (C) RIP ngg (D) RIP ng

18. IGRP runs directly over IP with protocol type field set to 1 3 4 2
   (A) 9 (B) 10
   (C) 8 (D) 12

19. _____ is used to flood the network with routing information. 1 1 4 1
   (A) Link state data (B) Link state booting
   (C) Link state routing (D) Link state advertisements

20. ECMP stands for 1 1 4 1
   (A) Equal-cost multipath (B) Equalent-cost multipath
   (C) Equivalent-cost multipath (D) Equal-cost multicast

21. When node S wants to send a packet to node D. But does not know a route to D, node S initiates a _____. 1 2 5 2
   (A) Route discovery (B) Router detection
   (C) Way discovery (D) Course finding

22. Which routing protocol has the smallest default administrative distance? 1 1 5 1
   (A) IBGP (B) OSPF
   (C) RIP (D) EIGRP

23. Which of the following is not the category of dynamic routing algorithm? 1 1 5 1
   (A) Distance vector protocols (B) Link state protocols
   (C) Hybrid protocols (D) Automatic state protocols

24. CGSR routing involves cluster routing, where by a node is required to find the best route over cluster heads from the 1 1 5 1
   (A) Cluster-member table (B) Group-member table
   (C) Team-member table (D) Individual-member table

25. An efficient link state packet forwarding mechanism is called 1 1 5 1
   (A) Multi point relaying (B) Single point relaying
   (C) Point-to-point relaying (D) Multi focus relaying

PART – B (5 × 10 = 50 Marks)
Answer **ALL** Questions

		Marks	BL	CO	PO
26. a.	With neat diagram explain network management architecture.	10	2	1	2
	(OR)				
b.	With the help of suitable architecture explain the router operations/ functions.	10	1	1	1
27. a.	Illustrate the shared CPU architecture of a router with neat diagram.	10	1	2	3
	(OR)				
b.	Explain the shared forwarding engine architecture with a switched backplane of a router.	10	2	24	
28. a.	Write down the algorithm of widest path calculation for Dijkstra based approach and find the shortest path with your own sample network.	10	2	3	3
	(OR)				
b.i.	Differentiate Bellman-Ford algorithm and the distance vector algorithm.	5	2	3	2
ii.	Compare and contrast routing table and forwarding table.	5	2	3	2