

B.Tech. DEGREE EXAMINATION, JUNE 2023

Seventh Semester

18ECE320T - SOFTWARE DEFINED NETWORKS

(For the candidates admitted during the academic year 2018-2019 to 2021-2022)

Note:

- 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 40 minutes.
- Part - B** and **Part - C** should be answered in answer booklet.

Time: 3 Hours

Max. Marks: 100

Part - A (20 × 1 Marks = 20 Marks)

Answer All Questions

Marks BL CO

- | | | | |
|--|---|---|---|
| 1. The ability to dynamically instantiate networks and to disable them when they are no longer needed is called _____. | 1 | 2 | 1 |
| (A) Agility | | | |
| (B) Multitenancy | | | |
| (C) Manipulation | | | |
| (D) Multiplicity | | | |
| 2. _____ architecture of SDN is better suited for data center networks. | 1 | 3 | 1 |
| (A) Distributed network control | | | |
| (B) Flat network control | | | |
| (C) Centralized network control | | | |
| (D) Static network control | | | |
| 3. The _____ was a multicast server that handled BUM traffic for a specific ELAN. | 1 | 2 | 1 |
| (A) LEC | | | |
| (B) BUS | | | |
| (C) LECS | | | |
| (D) LES | | | |
| 4. Layer 2 control plane focus on _____. | 1 | 2 | 1 |
| (A) Quality of services | | | |
| (B) Network address | | | |
| (C) Both network and physical address | | | |
| (D) Hardware or physical address | | | |
| 5. Centralized SDN controller suffered from _____. | 1 | 2 | 2 |
| (A) Coordination between applications | | | |
| (B) Memory management | | | |
| (C) Event detection | | | |
| (D) Controlling devices | | | |
| 6. VXLAN is _____. | 1 | 2 | 2 |
| (A) A switching protocol | | | |
| (B) Data compression protocol | | | |
| (C) A routing protocol | | | |
| (D) An encapsulation protocol | | | |
| 7. _____ is a popular SDN controller from Big switch Networks. | 1 | 3 | 2 |
| (A) Ryu | | | |
| (B) Trema | | | |
| (C) Flood light | | | |
| (D) POX | | | |
| 8. A flow table resides on _____. | 1 | 2 | 2 |
| (A) network device with flow entry alone | | | |
| (B) network device with flow entry and action | | | |
| (C) network device with action alone | | | |
| (D) Controller with flow entry and action | | | |
| 9. _____ is an open standard communication protocol for message oriented middleware based on XML. | 1 | 2 | 3 |
| (A) XMPP | | | |
| (B) IBGP | | | |
| (C) DMI | | | |
| (D) BGP | | | |

10. JSON is _____.	1	2	3
(A) defined using human readable XML			
(B) defined using human readable HTML			
(C) Not supporting hierarchical			
(D) JavaScript Object Network			
11. In Juniper networks, the service chaining is referred to as _____.	1	3	3
(A) The service Engineered path			
(B) vPath			
(C) Tunnel path			
(D) The sequential path			
12. _____ is used for creating redundant scalable data storage using clusters of standard servers.	1	3	3
(A) Glance			
(B) Quantum			
(C) Swift and Cinder			
(D) RESTful web			
13. This is a repository for the storage, management, and dissemination of data in which the mechanical, lighting, electrical and computer systems are designed for maximum energy efficiency and minimum environmental impact.	1	3	4
(A) Storage lab			
(B) Data Center			
(C) Data warehouse			
(D) Fabric			
14. Tunnelling is a strategy used when two computers are using _____.	1	3	4
(A) IP			
(B) IPv4			
(C) IPv5			
(D) IPv6			
15. _____ is a method of controlling network access.	1	2	4
(A) Firewall			
(B) RESTful			
(C) NVGRE			
(D) captive portal.			
16. _____ does not address the issue of multitenancy	1	2	4
(A) SDN via API			
(B) Open SDN			
(C) SDN via Overlays			
(D) Hypervisor based SDN			
17. The network virtualization component of OpenStack is provided by _____.	1	2	5
(A) Glance			
(B) Keystone			
(C) Neutron			
(D) Nova			
18. _____ predicts that disillusionment is followed by the slope of enlightenment and then by the plateau of productivity.	1	2	5
(A) Poisson matrix factorisation			
(B) Random forest algorithm			
(C) Naïve bayes algorithm			
(D) Gartner Hype Cycle			
19. One approach to applying OpenFlow to energy savings in the data center is _____.	1	2	5
(A) Beacon			
(B) Swift			
(C) Elastic tree			
(D) Cinder			
20. Floodlight is licensed by _____.	1	2	5
(A) GPL			
(B) Apache			
(C) EPL			
(D) FOSS			

Part - B (5 × 4 Marks = 20 Marks)

Answer **any 5** Questions

21. Draw and explain the SDN framework.	4	2	1
22. How network orchestration provides connectivity in SDN?	4	2	1
23. List the advantages of POX over NOX.	4	3	2
24. Illustrate how service engineered path is configured by the SDN controller.	4	4	3
25. Why are captive portals needed?	4	4	4

26. Discuss how SDN technology can overcome the current network limitations that limit the data center capacity.	4	4	4
27. Explain the use of SDN technology in security applications.	4	3	5

Part - C (5 × 12 Marks = 60 Marks)

Answer **All** Questions

28. a. Discuss about OpenFlow wire protocol for establishing control session in SDN.	12	4	1
(OR)			
b. SDN is a promising solution to meet the data center requirements. Justify the statement.			
29. a. Define flow and flow table in SDN. Differentiate between Proactive and Reactive flows.	12	3	2
(OR)			
b. Expound the five essential and important traits of SDN.			
30. a. List and explain any five open flow 1.3 Protocol additions	12	4	3
(OR)			
b. How NFV works? List the benefits of NFV.			
31. a. Compare the three main tunneling technologies encapsulation formats that have been proposed for network virtualization: VXLAN, NVGRE, and STT.	12	4	4
(OR)			
b. i. Illustrate how SDN technology is beneficial in Mobile networks			
ii. What are types of data centres			
32. a. Describe and compare the features of the open flow open source switch implementations.	12	4	5
(OR)			
b. Discuss the Open source licensing issues in detail.			
