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B.Tech DEGREE EXAMINATION, NOVEMBER 2023

Seventh Semester

18ECE320T - SOFTWARE DEFINED NETWORKS

(For the candidates admitted during the academic year 2020 - 2021 & 2021 - 2022)

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

Time: 3 Hours **Max. Marks: 100**

PART - A (20 × 1 = 20 Marks)

Answer **all** Questions

		Marks	BL	CO
1.	SDN stands for..... (A) software defined network (B) software definition network (C) service defined network (D) service definition network	1	1	1
2.	What are the 3 layers that make up SDN? (A) The network layer, 2) The physical layer, and 3) The transport layer (B) The application layer, 2) The control layer, and 3) The physical layer (C) The application layer, 2) The transport layer, and 3) The network layer (D) The transport layer, 2) The network layer, and 3) The datalink layer	1	1	1
3.	Traditional networks requires (A) Application specific integrated circuits (B) Fixed function network devices (C) Dedicated Hardware (D) More equipment for expansion	1	1	1
4.	The layers in SDN communicate via (A) A Set of protocols (B) A Set of routers (C) A Set of switches (D) A set of interfaces	1	1	1
5.	Flows are represented on a device as a (A) Data entry (B) Flow entry (C) Switch entr (D) Router entry	1	2	2
6.	SDN applications are built on .....of the controller (A) Left side (B) Bottom (C) Top (D) Right side	1	2	2
7.	.....is where the controller decides to modify a flow based on the traffic load currently being driven through a network device (A) Proactive flow (B) Active flow (C) Reactive flow (D) Hybrid flow	1	2	2
8.	Abbreviation of TCAMs is ..... (A) Temporary content-addressable memories (B) Ternary concept-addressable memories (C) Ternary content-addressable memories (D) Ternary content-addressable map	1	2	2

9.	A unique aspect of the OpenFlow switch is embodied in the ..... function (A) Packet-matching (B) Packet-Correcting (C) Packet-separating (D) Packet-detecting	1	2	3
10.	The controller has a data packet to forward out through the switch, it uses the OpenFlow.....message. (A) PACKET_Match (B) PACKET_IN_OUT (C) PACKET_IN (D) PACKET_OUT	1	2	3
11.	The ..... defines the communication between an OpenFlow controller and an OpenFlow switch. (A) Flow entry (B) Flow Table (C) OpenFlow protocol (D) OpenSide protocol	1	2	3
12.	If the end of the flow table is reached without finding a match, it is called a ..... (A) Flow table (B) Table miss (C) Packet OUT (D) Packet IN	1	2	3
13.	Individual organizations that maintain their own data centers belong in this category (A) Private single-tenant (B) Private multitenant (C) Public multitenant. (D) Both (a) and (b)	1	2	4
14.	The three main business models of cloud computing are ,....., Platform as a Service (PaaS), and Software as a Service (SaaS) (A) Non-Accumulating Stratum (B) Non-Access Stratum (C) Infrastructure as a Service (IaaS) (D) MAC Address Explosion	1	2	4
15.	Data centers needs more..... bandwidth (A) Center-sectional (B) Narrow bandwidth (C) Broad bandwidth (D) Cross-sectional	1	2	4
16.	.....is the earliest well-known example of a PTP / overlay network (A) Napster (B) Device (C) Failure Recovery (D) Multitenancy	1	2	4
17.	MeSDN is ..... (A) Mobile Extension of SDN(MeSDN) (B) Mobile External of SDN(MeSDN) (C) More Extension of SDN(MeSDN) (D) Motor Extension of SDN(MeSDN)	1	2	5
18.	.....is an extremely popular licensing form (A) GCL (B) GPL (C) GPC (D) GPF	1	2	5
19.	The ..... can be viewed as a compromise between the strong copyleft aspects of the GPL and the commercially friendly Apache license. (A) Extensible Public License (EPL) (B) Extra Public License (EPL) (C) Eclipse Public License (EPL) (D) Eclipse Pulse License (EPL)	1	2	5
20.	..... is the most mature and feature-complete open source implementation of the switch side of an OpenFlow implementation (A) GPL (B) OTS (C) OGS (D) OVS	1	2	5

PART - B (5 × 4 = 20 Marks)

Answer **any 5** Questions

		Marks	BL	CO
21.	Describe the need for SDN.	4	2	1
22.	Write short notes on fundamental Characteristics of SDN	4	2	2
23.	Describe about the limitations OpenFlow	4	2	3
24.	Elaborate the SDN Use Cases in the Data Center	4	2	4

25.	Describe the following • Profiles of SDN open source users • Potential novel applications of open SDN	4	1	5
26.	Brief abut the following • Data center • Demands of data center	4	2	4
27.	Brief about the SDN Devices	4	2	2

PART - C (5 × 12 = 60 Marks)

Answer **all** Questions

		Marks	BL	CO
28.	(a) Describe about the following i) Moving Information Between Planes and Importance of the Separation of planes ii) Distributed Control Planes and Creating the IP Underlay	12	2	1
	(OR)			
	(b) Brief about the following (i) Load Balancing and High Availability, (ii) Creating the MPLS Overlay, Replication and , Route Servers			
29.	(a) Explain the SDN devices and SDN controller with necessary diagram	12	2	2
	(OR)			
	(b) What are the functionality of the following i)VMware and Nicira ii) Mininet , NOX/POX and Big Switch Networks/Floodlight			
30.	(a) Draw the OpenFlow architecture and explain in detail on the openflow switch and openflow controller.	12	2	3
	(OR)			
	(b) Describe about the following i) Network programmability and the management interface ii) Publish and subscribe interfaces and XMPP			
31.	(a) Write about the tunneling technologies and path technologies in the for the data center	12	2	4
	(OR)			
	(b) Explain about the real-world data center implementations, optical networks, mobile networks and In-line network functions.			
32.	(a) Describe about the following i) Open source licensing issues, profiles of SDN open source users ii) Switch implementations and controller implementations	12	2	5
	(OR)			
	(b) Explain the SDN and NFV mobile network architectures with a neat diagram.			

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