POORNIMA UNIVERSITY, JAIPUR
END SEMESTER EXAMINATION, 2023-2024 EVEN SEMESTER

BCA (IT-IMS & Cloud Computing) II () - IV (Main/Back) End Semester Examination, April 2024
BCTCCA4104: Network Administration

Time: 3 Hours　　　**Total Marks:** 60　　**Min. Passing Marks:** 21/24/27　　**Question Paper ID:** 001260

Instructions: Attempt all five questions. There is an internal choice either (a or b) in Q1 to Q5. Marks of each question or its parts are indicated against each question/part. Draw neat sketches wherever necessary to illustrate the answer. Assume missing data suitably (if any) and clearly indicate the same in the answer.

Bloom Level(BL): 1-Remembering, 2-Understanding, 3-Applying, 4-Analysing, 5-Evaluating, 6-Creating

Use of following supporting material is permitted during examination for this subject: Nil

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Q1. **(a)** (i) Discuss the TCP/IP model and its relevance to network administration. **[6 marks]**
(ii) Explain the role of Internet Protocol. What are the different classes of IP addresses? **[6 marks]**

Marks BL CO
12　1　1

(OR)

(b) (i) Describe the fundamentals of LAN (Local Area Network) and WAN (Wide Area Network. **[6 marks]**
(ii) Discuss the challenges and considerations in IPv6 adoption for network administration. **[6 marks]**

Q2. **(a)** (i) What is Ethernet, and how does it form the basis of LAN (Local Area Network) communication? **[6 marks]**
(ii) What is a switch? How does it differ from a hub in Ethernet LAN environments? **[6 marks]**

Marks BL CO
12　2　2

(OR)

(b) (i) What are VLANs (Virtual Local Area Networks), and how are they implemented in network administration? **[6 marks]**
(ii) Write down steps to configure, verify and troubleshoot port security. **[6 marks]**

Q3. **(a)** (i) What is a subnet mask, and how does it determine the boundaries of subnets in IPv4 addressing? **[6 marks]**
(ii) Write down the steps of subnetting a network and how it divides a larger network into smaller subnetworks.**[6 marks]**

Marks BL CO
12　3　3

(OR)

(b) (i) Write down steps for troubleshoot ethernet LANs. **[6 marks]**
(ii) Describe Spanning Tree Protocol. **[6 marks]**

Q4. **(a)** (i) Describe the purpose of routing in different networks. **[6 marks]**
(ii) Discuss the difference between static routing and dynamic routing. **[6 marks]**

Marks BL CO
12　1　4

(OR)

(b) (i) What do you understand by Boot Process of Cisco IOS Routers? **[6 marks]**
(ii) Write down the difference between OSPF and EIGRP protocols in the context of LAN routing. **[6 marks]**

Q5. **(a)** (i) Describe infrastructure services in the context of network administration, and why are they important? **[6 marks]**
(ii) Describe the purpose of network address translation (NAT) in infrastructure services, and how is it implemented? **[6 marks]**

Marks BL CO
12　1　5,6

(OR)

(b) (i) Describe the role of high availability (FHRP) protocol.**[6 marks]**
(ii) What do you understand by DHCP protocol? How can we configure DHCP on Cisco router? **[6 marks]**

End of Question Paper