



PIONEER INTERNATIONAL UNIVERSITY

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UNIVERSITY EXAMINATIONS

ACADEMIC YEAR: 2020/2021

SEMESTER: MAY-AUG 2021

CODE:BSNA 4130

UNIT: NETWORK ADMINISTRATION

DATE: AUGUST 2021

TIME: 2 HOURS

INSTRUCTIONS: Answer question one and any other two

SECTION A: Compulsory.

QUESTION ONE

- a.) Calculate the correct usable host ranges for the following IPv4 network subnets: **8 Marks**
- a. 172.28.228.144/21
 - b. 172.28.228.144/18
 - c. 172.28.228.144/23
 - d. 172.28.228.144/25
- b) The convergence of the many different communication media onto a single network platform is fueling exponential growth in network capabilities. There are major trends that are contributing to the future shape of complex information networks. Discuss these trends. **8 Marks**
- c) Outline the tasks in a clean installation of Windows Server 2019. **5 Marks**
- d). Explain the following terminologies in relation to Windows Server 2019:
- (i) Workgroup **2 Marks**
 - (ii) Domain **2 Marks**
- e). Once you have configured a static IP address and DNS suffix on your non-domain-joined server, Explain the steps you would follow to install the DNS role. **5 Marks**

SECTION B: CHOOSE ANY TWO QUESTIONS

QUESTION TWO

- a. When creating new users, you must get into the New User dialog box. Explain briefly all the fields in this dialog box. **5 Marks**

- b. The PIU corporate LAN consists of one large flat network. You decide to segment this LAN into two separate networks with a router.
- (i). What will be the effect of this change? **2 Marks**
- (ii) How many subnetworks and hosts are available per subnet if you apply a /27 mask to the 210.10.2.0 class C network? **3 Marks**
- (iii) What is the IP address range for the first octet in a class C address, in binary form? **3 Marks**
- (iv) When a host transmits data across a network to another host, which process does the data go through? **1 Mark**
- c. Discuss the following software troubleshooting tools:
- (i) NMS tools **3 Marks**
- (ii) Protocol Analyzers **3 Marks**

QUESTION THREE

- a. The Print and Document Services role is added to your server when you want it to become a print server. When you add this role, you will have the option of adding several different services depending on what you want the print server to do. Explain any three of these services. **6 Marks**
- b. Although it does not actually convert the computer into a domain controller, installing the Active Directory Domain Services role prepares the computer for the conversion process. Outline the procedure for installing Active Directory Domain Services. **10 Marks**
- c. Outline the steps to follow to join a Windows Server 2019 to a domain to make it a member server. **4 Marks**

QUESTION FOUR

- a. WANs are groups of LANs connected with communications links from a service provider. Because the communications links cannot plug directly into the LAN, it is necessary to identify the various pieces of interfacing equipment. Describe the functions of the following WAN devices:
- (i) Router **2 Marks**
- (ii) CSU/DSU **2 Marks**
- (iii) Modem **2 Marks**
- (iv) Communication server **2 Marks**
- b. Briefly discuss Network Management under the following headings:
- (i) Network Documentation **4 Marks**
- (ii) Network Security **4 Marks**
- c. Discuss the stages involved when gathering symptoms for a network problem. **4 Marks**