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**GASABO DISTRICT**

**DISTRICT COMPREHENSIVE ASSESSMENT, RTQF LEVEL… 2023-2024**

**SECTOR: ICT & MULTIMEDIA**

**TRADE: SOFTWARE DEVELOPMENT**

**MODULE CODE: GENBN401**

**MODULE NAME: BASICS OF NETWORKING**

**DATE OF EXAM: 18/3/2024**

**DURATION: 3HOURS**

**SCHOOL YEAR: 2023-2024**

**TERM: 2**

**Instructions:**

1. **Attempt all questions in section A (55 Marks)**
2. **Attempt three questions in section B (30 Marks)**
3. **Attempt one question in section C (15 Marks)**

**SECTION A**

1. **What is a network and what are its components? /5Marks**
2. **Describe the Internet and its significance. /5Marks**
3. **What is a LAN and how does it differ from a WAN? /5Marks**
4. **Explain the role of a router in a network. /3Marks**
5. **What is the function of a firewall in network security? /3Marks**
6. **Define bandwidth in networking. /3Marks**
7. **Differentiate between Client-Server Network and Peer-to-Peer Network. /5Marks**
8. **Differentiate between logical and physical network topologies. /5Marks**
9. **Explain the concept and features of Star Topology. /5Marks**
10. **Describe Ring Topology and its characteristics. /5Marks**
11. **What is Hybrid Topology, and what are its characteristics? /4Marks**
12. **Define Protocols in networking. /3Marks**
13. What is the purpose of subnetting IP addresses, and what are the benefits of subnetting? **/4Marks**

**SECTION B**

1. **Describe different network technologies.**
2. Give the full of the following acronyms: **/10Marks**
3. DHCP:
4. ISP:
5. NAT:
6. PAT:
7. VLSM:
8. FLSM:
9. MAU:
10. Complete the following table about IPv4 class ranges: **/10Marks**

|  |  |  |
| --- | --- | --- |
| Class | Start | End |
| A |  |  |
| B |  |  |
| C |  |  |
| D |  |  |
| E |  |  |

1. Fiber optics exist in two types. Discuss them. **/10Marks**
2. While making Ethernet cross-over cable, there is international color coding to follow. Give the color coding for both end of a cross-over cable. **/10Marks**

**SECTION C: MANDATORY**

1. Given the network address of **192.168.132.0** and the subnet mask of **255.255.255.0** with CIDR notation **/28**. Subnet by answering the five questions related to subnetting. **/15Marks**