

L4 NIT

FIBER OPTIC

To be submitted on Monday

Q1. True or False

Indicate whether each statement is TRUE or FALSE.

1. Splitter loss is a significant factor in the link loss budget calculation.
 2. The route map for a fiber optic network should only include the main cable paths and ignore any potential obstacles.
 3. Identifying components accurately is crucial for the efficient design and maintenance of a fiber optic network.
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Q2. Multiple Choice

Select the best answer for each question.

1. Which of the following is NOT a factor in calculating the link loss budget?
 - a) Fiber loss
 - b) Splicing loss
 - c) Connector loss
 - d) Signal modulation
 2. What is the primary purpose of a reserve restoration cable?
 - a) To increase data transmission speed
 - b) To provide a backup in case of cable failure
 - c) To reduce splicing loss
 - d) To enhance signal strength
 3. Which type of transmission equipment is typically used for long-distance fiber optic communication?
 - a) Optical amplifiers
 - b) Ethernet switches
 - c) Coaxial cables
 - d) Wireless routers
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Q3. Short Answer

Answer the following questions clearly and concisely.

1. Describe the process of selecting the optimal fiber optic route for a new network installation. What factors must be considered?
2. What environmental factors (e.g., temperature, humidity, electromagnetic interference) should be considered when selecting a fiber optic route?
3. How will the route map be used and maintained?
4. What type of fiber optic cable is used for reserve restoration?
5. What potential delays or challenges could affect the installation timeline?
6. What is the estimated connector loss per connector?
7. What types of optical switches or multiplexers will be needed?
8. Explain how you would calculate the total link loss budget for a fiber optic network. Include all relevant components and their respective losses.
9. What are the key steps involved in scheduling the installation of a fiber optic network?
10. What is the required data transmission rate for the network?

Practical Assessment

Scenario:

ABC University wishes to upgrade its network infrastructure to support high-bandwidth applications, including video conferencing, online courses, and research activities. The goal is to design a fiber optic network that provides reliable and high-speed connectivity to all campus buildings.

Task:

You are responsible for planning all aspects required to deploy the fiber optic network.