

## **Self-Evaluation Exercise on ELV, Communication and Security Systems**

(\* Please try to complete the questions without referring to the lecture notes)

### **Extra Low Voltage (ELV)**

1. Briefly describe the three types of extra low voltage (ELV) sources. Explain the principles of using ELV design to ensure safety of the electric circuit.
2. Briefly explain the three main goals of intelligent building and the main tasks and attributes.
3. Explain the design considerations for planning a general equipment room for information technology in a high-tech building.
4. Briefly describe four common types of ELV systems used in commercial and residential buildings. Illustrate with suitable diagrams if needed.

### **Communication Systems**

5. Briefly explain the OSI Seven-layer reference model for communication network systems. What are the advantages of using network methods for communication?
6. What are the common types of transmission methods or media for communication systems? Briefly describe each of them.
7. What are the common parts of cabling systems? Briefly explain the important factors for cable selection.
8. What is the meaning of Structured Cabling System (SCS)? What are the important factors to consider when planning and designing the cable distribution and telecommunication in a high-tech office building?

### **Security and Alarm Systems**

9. What are the main objectives of security design? What purposes can security and alarm systems usually achieve?
10. Briefly explain the key concerns of security design for a commercial building. What a good security plan shall include?
11. Briefly explain the important factors/concepts for security system design and planning. What are the major elements affecting the risk of burglary in a residential building?
12. Describe the four common types of security and alarm systems. Illustrate their components with suitable diagrams.