CONSTRUCTION INDUSTRY COUNCIL
建造業議會

HONG KONG CONSTRUCTION INDUSTRY TRADE TESTING CENTRE
香港建造業工藝測試中心

Building Security System Mechanic Trade Test
Practical Test Mock Paper

(Version：EBD-PM-EN-02)

此文件關於建築物防盜系統技工技能測試實務測試模擬試題。
如需索取中文版本，請致電 2100 9000 與香港建造業工藝測試中心聯絡。

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Building Security System Mechanic

Trade Test Practical Test Mock Paper

Title: Building Security System Mechanic

Skill level: Skilled Worker

Test Requirements and Duration:

Procedures and requirements	Duration
1. **Dynamic risk assessment prior to work** Conduct dynamic risk assessment on worksite environment, equipment and tools, materials and safety equipment prior to work, including identification of potential hazards and taking countermeasures to ensure that potential hazards are eliminated and/or risks are reduced before commencement of work.	5 minutes
2. **Preparation prior to work and protection to work site** Review the worksite delivered by the person-in-charge / worker of the previous work process, and perform proper protection as well as appropriate preparations before commencement of work according to the worksite environment and the conditions of the workpiece etc.	5 minutes
3. **Practical Test** Carry out the works in accordance with the requirements, specifications and drawing(s), and complete the specified works at the designated locations. **Test Content** **1. Color identification and handling of multi-core communication cable terminal** After removing appropriate length of the sheath, connect 20 wires of a 40-core communication cable to sample wires of the same color at the locations specified on the couplet (location and color must match perfectly) (Refer to Working Drawing 1) **2. Circuit Board Welding** Place two terminal posts on a universal board as shown in the front view. At the respective locations at the back (copper foil), use fusible alloy to weld bare copper wire, with 12 welding points in total. (Refer to Working Drawing 2)	4 hours

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Building Security System Mechanic
Trade Test Practical Test Mock Paper (Con't)

Test Requirements and Duration (con't):

Procedures and requirements	Duration
Test Content (Con't) **3. Installation of speed dome and IP camera system with video-recording equipment** i. Connection system Install and wire according to the drawing (Refer to Working Drawing 3) ii. Trouble finding / fixing Door magnet (delayed) One of the components provided by the test center is erroneous and does not function properly. After connecting the system, candidates need to locate and replace the malfunctioning component; Every time a malfunctioning component is replaced, candidates must fill in the attached form for record; marks will be deducted if candidates take more than one replacement to locate the malfunctioning component. iii. System setting After troubleshooting and reinstallation, candidates should change the system setting as needed, so that the "security alarm" system and the protective function of all sensors are activated (you may refer to the respective user's manual). Note: Whenever power supply is disconnected, system time must be reset, otherwise the system will display an error message. iv. System testing After installation and troubleshooting, candidates should test the "security alarm" system to ensure every device functions properly and satisfies the test center's requirements. **4. Installation of visitors' intercommunication system for buildings** i. <u>Connect the system</u> a. Connect all components according to the drawing (candidates should produce their own signal cables). b. Label the two ends of the three cat.5 cables connecting the router as (IP Cam), (DVR) and (PC) respectively.	Refer to previous page

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Building Security System Mechanic
Trade Test Practical Test Mock Paper (Con't)

Test Requirements and Duration (con't):

Procedures and requirements	Duration
Test Content (Con't) **4. Installation of visitors' intercommunication system for buildings (con't)** ii. <u>System setting</u> After completing the wire connection and installation, candidates should make the follow system setting. a. Name the (IP Camera) as "CCTVcam" b. Set the current time and date for the (IP Camera) c. Use the computer network to set the speed dome camera, so that the computer could monitor the screen of the IP camera via wifi. iii. <u>System testing</u> Upon installation and setting, candidates should test the "speed dome and IP camera system with video-recording equipment" system, so as to make sure all devices function properly. This includes: a. Using the mouse to control the speed dome camera b. Monitoring the screen of the IP camera through wifi c. Use a video-recording software to record a 20-second video, to prove that the equipment meets the test's requirements **5. Installation visitors' intercommunication system for buildings** i. System connection: Install and wire according to the drawing; ii. System testing: After installation and troubleshooting, candidates should test whether all devices of the "visitors' intercommunication system for buildings" function properly and meet the test center's requirements	Refer to previous page
4. <u>Housekeeping after work and final touch-up on work before handover</u> After completion of work, clean and tidy up the worksite, equipment, tools and materials, and review the quality of workpiece taking into account of the possible impact on the upcoming work process. The finished workpiece should be properly handled in preparation for delivery along with the worksite.	5 minutes

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Building Security System Mechanic
Trade Test Practical Test Mock Paper (Con't)

Note:

1. Candidates should read the attached "Notes to Candidate" before commencement of work and comply with all test related rules and requirements.

2. Practical test assessment framework is comprised of "Technical Assessment" and "Dynamic Risk Assessment and Safety Practice Assessment". Candidates must fulfil the passing requirements for both assessment parts to achieve an overall "Pass" grade in the practical test.

Passing Requirement for "Technical Assessment"	Passing Requirement for "Dynamic risk Assessment and Safety Practice Assessment"
Achieve 60 marks out of 100 marks; and meet the specific requirement(s) in the critical assessment items of the technical assessment.	Achieve 60 marks out of 100 marks; and meet the specific requirement(s) in the critical assessment items of "Dynamic Risk Assessment and Safety Practice Assessment".

Precautions

This document is provided as reference for test preparation only. Under all circumstances all content in the official test papers, including but not limited to the terms and conditions therein, prevails.

There are different versions of the test paper, content include but not limited to tools, materials, equipment, drawing, construction details or procedures and different simulated site environments. Candidates should refer to the official test documents during testing. The CIC reserves the right, at its sole and absolute discretion, to change, update or delete the contents in this document at any time without prior notice.

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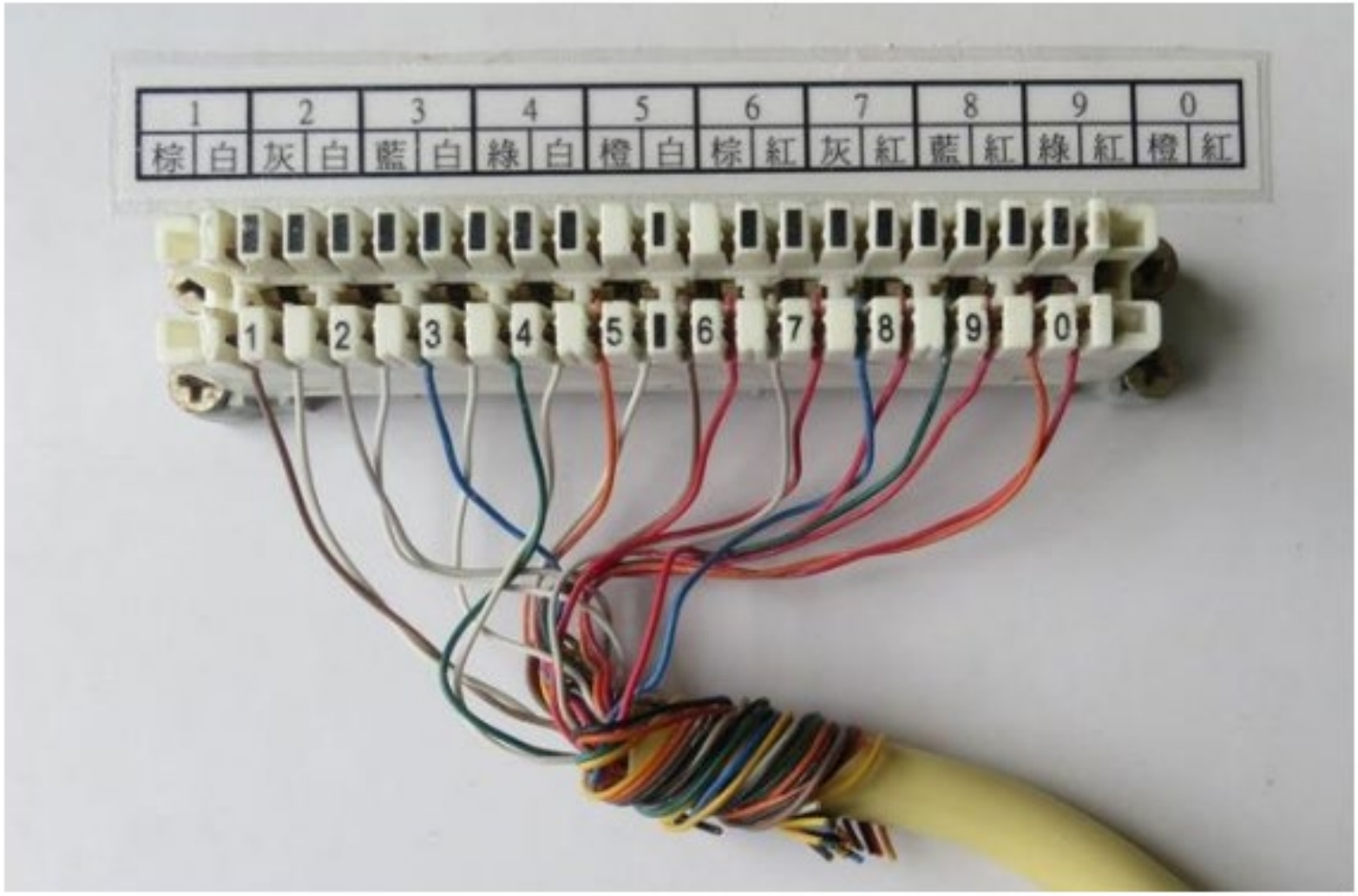
Working Drawing (1)

Color identification and handling of multi-core communication cable terminal



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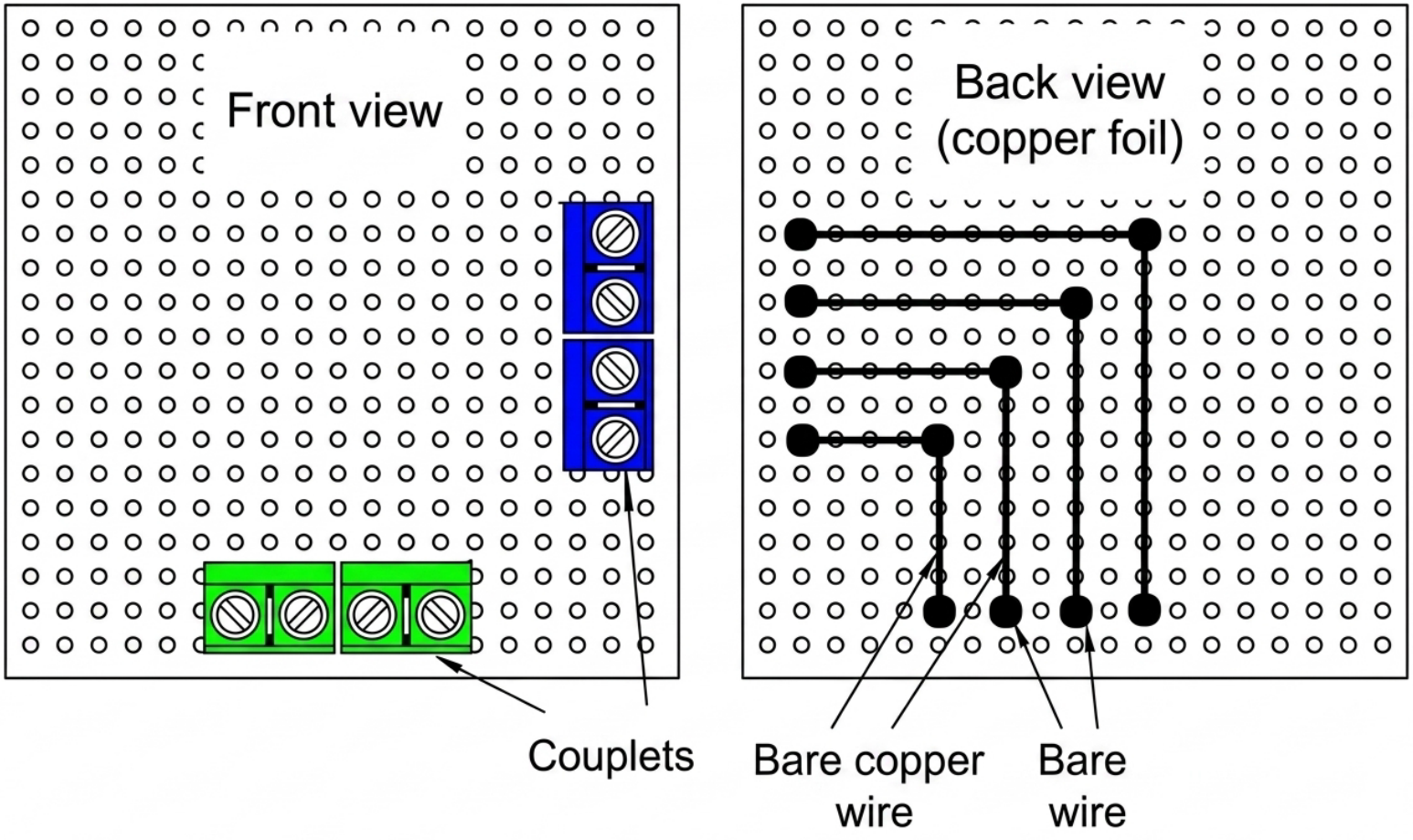
Working Drawing (2)
Welding points



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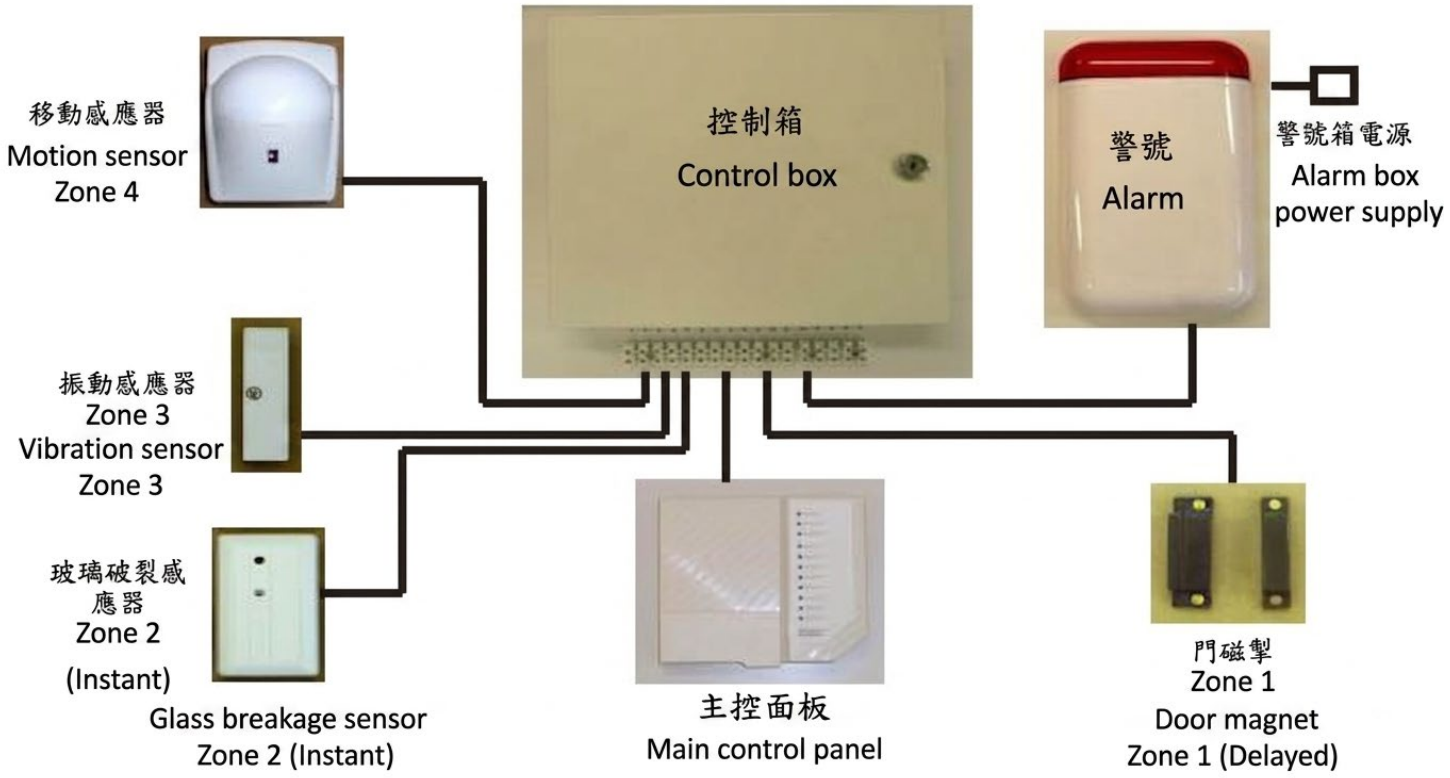
Working Drawing (3)
Security alarm system wiring diagram



Note:

(i) Candidates are required to test the stability of the connected wires, and ensure the satisfactory connection.

(ii) Incomplete work will be subject to mark deductions in proportion to the extent of the deficiencies.

(iii) Candidates must measure the system with appropriate meters, and make necessary modifications to the system so that it operates normally.

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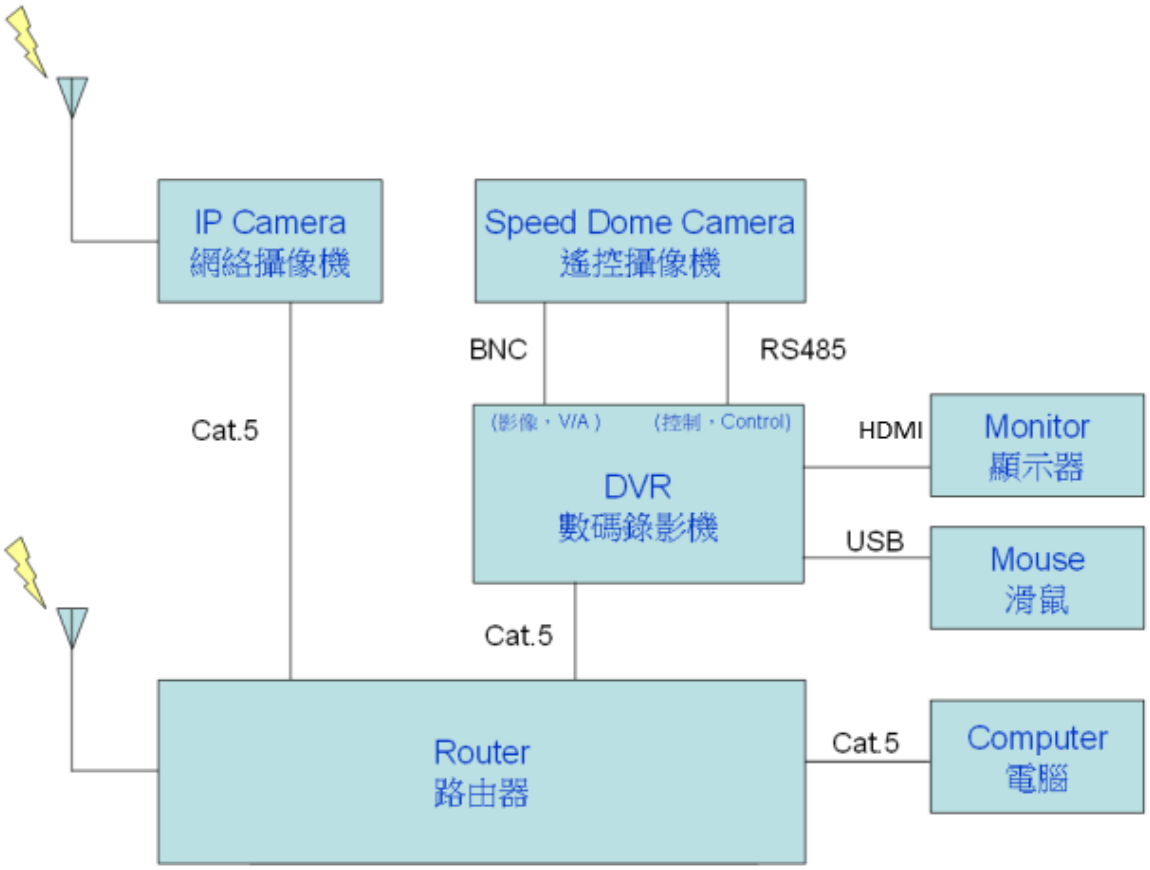
Working Drawing (4)
Speed dome and IP camera system with video-recording equipment wiring diagram



Note:

(i) Candidates are required to test the stability of the connected wires, and ensure the satisfactory connection.

(ii) Incomplete work will be subject to mark deductions in proportion to the extent of the deficiencies.

(iii) Candidates must measure the system with appropriate meters, and make necessary modifications to the system so that it operates normally.

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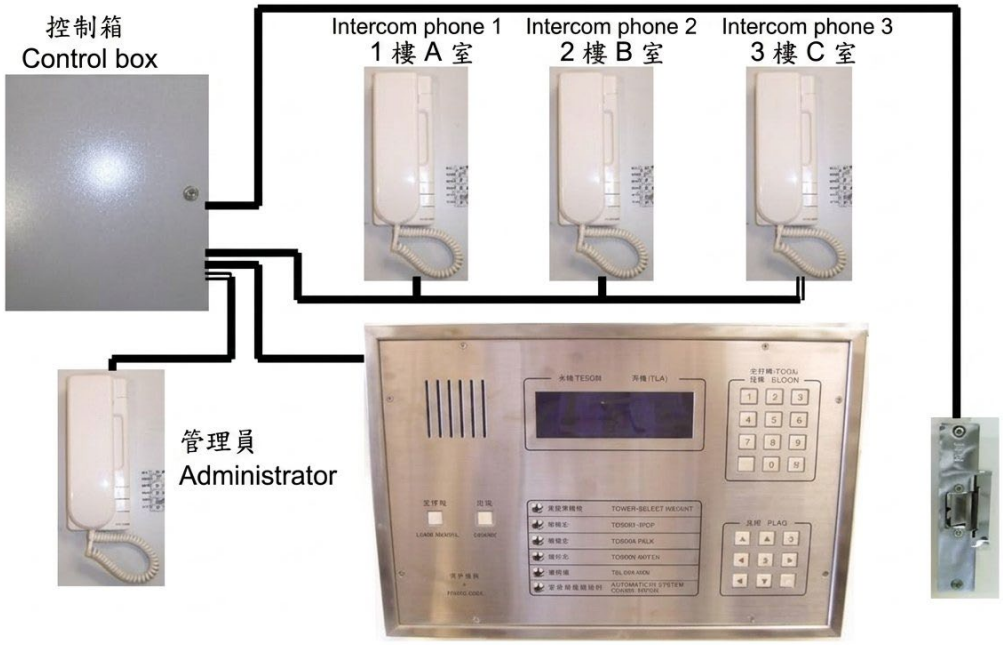
Working Drawing (5)
Visitors' intercommunication system for buildings wiring diagram



Note:

(i) Candidates are required to test the stability of the connected wires, and ensure the satisfactory connection.

(ii) Incomplete work will be subject to mark deductions in proportion to the extent of the deficiencies.

(iii) Candidates must measure the system with appropriate meters, and make necessary modifications to the system so that it operates normally.

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Notes to Candidate

1. Candidates should read the test papers carefully and ask the invigilator for any queries.
2. The practical test making scheme is based on the following criteria:
   a. Understanding of drawing and specification
   b. Preparation work before commencement of test
   c. Working procedures, accuracy and quality of work
   d. Proper handling and use of materials
   e. Proper use of tools and equipment
   f. Housekeeping after completion of test
   g. Safety precautions
3. Candidates should study the drawings and specifications attached to the test paper, if any, before the test begins.
4. Candidates should carry out the test according to test papers, working drawings and specifications provided.
5. Candidates should bring their own safety shoes and appropriate workwear, other safety equipment will be provided by HKCITTC. Candidates must take all necessary safety precautions to ensure work safety.
6. All tools and materials required by the test will be provided by HKCITTC, candidates should check and ensure their adequacy and quality. All the tools must be returned to HKCITTC after the test. The candidates may ask the invigilator for any problems.
7. Candidates are required to handle and move the tools and materials for use in the test, and to carry out associated work.
8. All candidates must stop when time is up.
9. Candidates are required to return the test paper to invigilator after the test.
10. Invigilators will take record photos periodically during the test.
11. Candidates are not allowed to take any photo or video with cameras or mobile phones.
12. Candidates are not allowed to use their mobile phones during the trade tests, except for in an emergency.
13. Offering bribes to an invigilator is an offence in law and HKCITTC will report to the ICAC for any such case.
14. Subject to certain situations and/or conditions of the date of event, trade tests/courses could be at any moment suspended or postponed at discretion of the invigilators. Examples of such situation/condition could be, but not limited to, (a) sudden operation disruptions to classrooms, test venues, test equipment or tools etc. due to unforeseeable mishaps; (b) sickness or injury of candidates, students or elated staff of the HKCITTC; (c) adverse weather conditions. HKCITTC will rearrange another appointment, for free, with the candidates/students affected. Whilst every effort is made to ensure the smooth running of trade test/courses, the HKCITTC will not resume any liability any loss/damage directly or indirectly related to such arrangement.

In the event that the candidate fails to take any necessary safety precautions and / or works in any dangerous situations, he / she will be deemed failed.

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