

College of Industrial Technology
King Mongkut's University of Technology North Bangkok

Final Examination of Semester 1
Subject: 341131 Electrical Drawing I
Date: 4 December 2018

Year: 2018
Section: 5-6
Time: 10.00-12.00

Name..... ID..... EP.....

Instructions:

1. The examination has 6 pages (including this page), 1 question and a total score of 40 points.
 2. Write all your solution and answers on the answer sheet.
 3. This is a closed book examination.
 4. You are not allowed to leave the exam room during the first 1 hour after the beginning of the exam.
 5. You are not allowed to open the exam papers or start to answer before the proctor's permission.
 6. You are not allowed to use the restroom during the exam except in case of an emergency.
 7. No documents are allowed to be taken out of the examination room.
 8. Calculator is not allowed in the examination.
 9. Electronic communication devices are NOT allowed in the examination room.
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**Cheating in the exam is considered an extremely serious
offence which will result in expulsion from the University.**

- The following floor plan of 2 floor building is shown in Figure 1. Please design the circuits, then draw the one-line diagrams and the control diagrams of both floor plans.



Figure 1: Two floor plans

The 1st floor plan includes 8 incandescent lamps (E1, E2, E3, E4, E5, E6, E7 and E8), 4 series incandescent lamps (2x2), (E9, E10, E11 and E12), 1 series incandescent lamp (1x1), (E13), 2 series fluorescent lamps (2x40W), (L1 and L2), 5 switches (S1, S2, S3, S4 and S5), 2 series switches (S6 and S7), 4 two-way switches (S8, S9, S10 and S11), 4 plug sockets, 1 kWh meter, and 1 Load center (LC).

The 2nd floor plan includes 8 incandescent lamps (E14, E15, E16, E17, E18, E19, E20 and E21), 2 series incandescent lamps (2x2), (E22 and E23), 2 two-way switches (S10 and S11), 5 switches (S12, S13, S14, S15 and S16), 2 series switches (S17 and S18), and 4 plug sockets.

Each switch and plug socket of the circuits are written in Table 1 and Table 2.

Table 1: LC of 1st Floor

Equipment	Load Center
S1, S2 and S3	1LC
S4, S5 and S6	2LC
S7, S8 and S9	3LC
S10 and S11	4LC
plug sockets	5LC

Table 2: LC of 2nd Floor

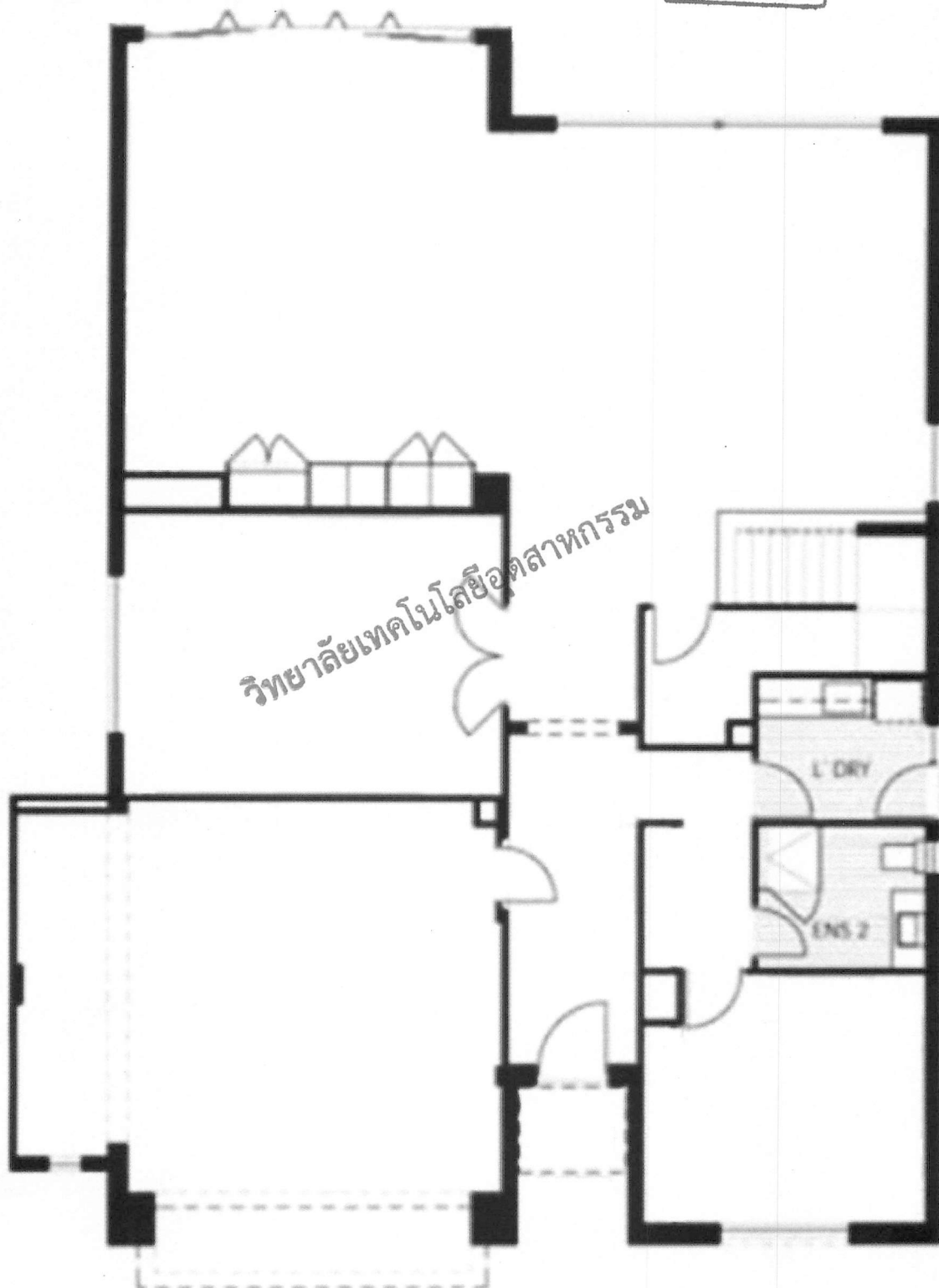
Equipment	Load Center
S10 and S11	4LC
S12, S13 and S14	6LC
S15, S16 and S17	7LC
S18	8LC
plug sockets	9LC

Remark:

- For one-line diagram, S10 must be installed on the 1st floor, while S11 must be installed on the 2nd floor.
- For control diagram, S10 and S11 must be drawn on the 1st floor plan **ONLY**.

Answer Sheet of 341131

เลขที่นั่งสอบ

One-line diagram of 1st floor (10 points)

Name:

Score :

Final Paper

Student ID:

No.:

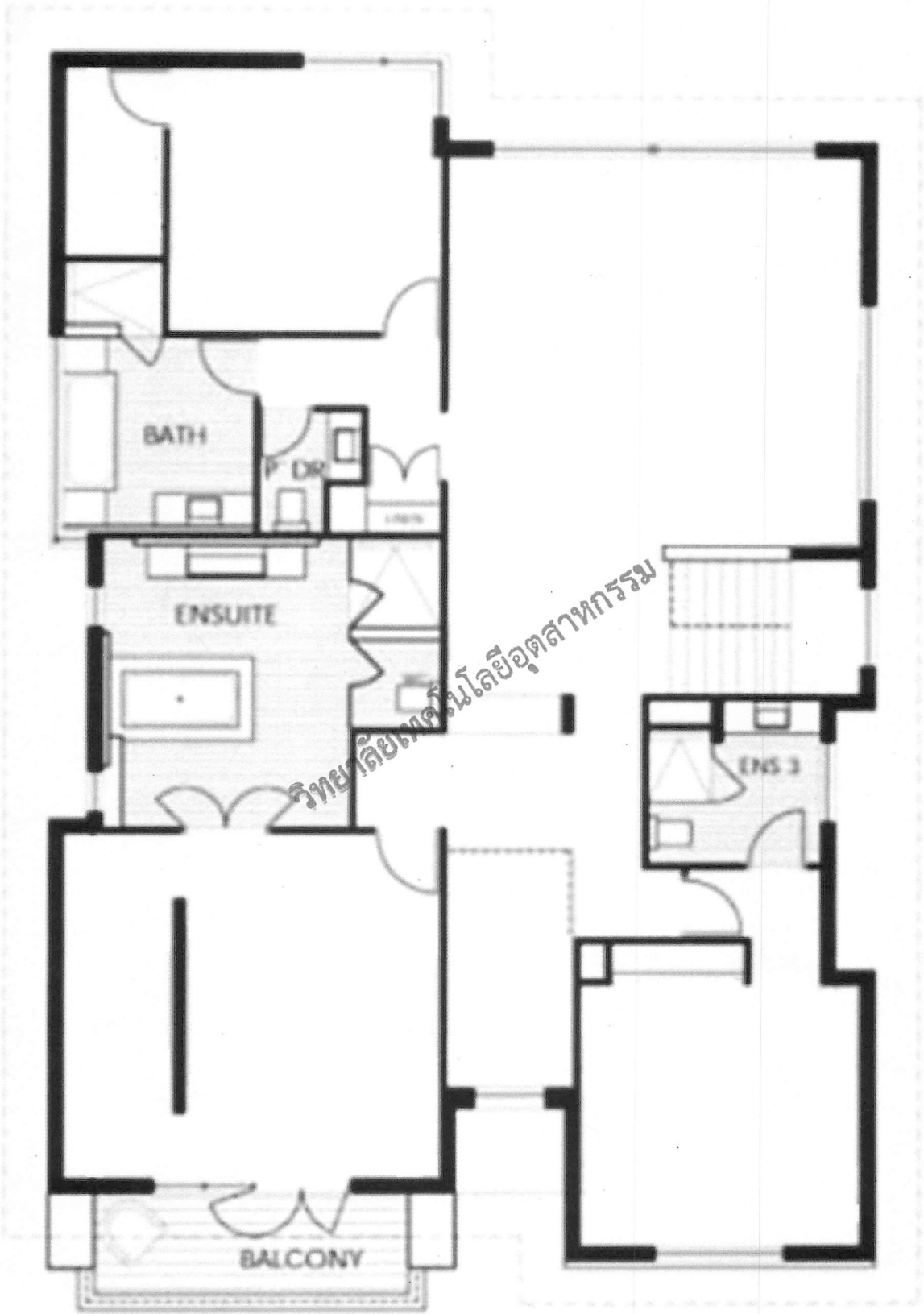
#1-1

Control diagram of 1st floor (10 points)

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Name:	Score :	Final Paper
Student ID: No.:		#1-2

One-line diagram of 2nd floor (10 points)



Name:

Student ID:

No.:

Score :

Final Paper
#1-3

Control diagram of 2nd floor (10 points)

วิทยาลัยเทคโนโลยีอุตสาหกรรม

Name:	Score :	Final Paper #1-4
Student ID: No.:		