

Experimental Exam



Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

Dhahran - Saudi Arabia 2025

A1-1

Japanese-Experiments (Japan)

電磁調理器の物理学 - 解答用紙

C.1. 誘導コイルの特性評価 (4.5 pts)

1.1 (0.4 pt)

$$R_c =$$

1.2 (1.2 pt)

Experimental Exam



 APhO

Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-2

Japanese-Experiments (Japan)

1.2 (cont.)

Experimental Exam



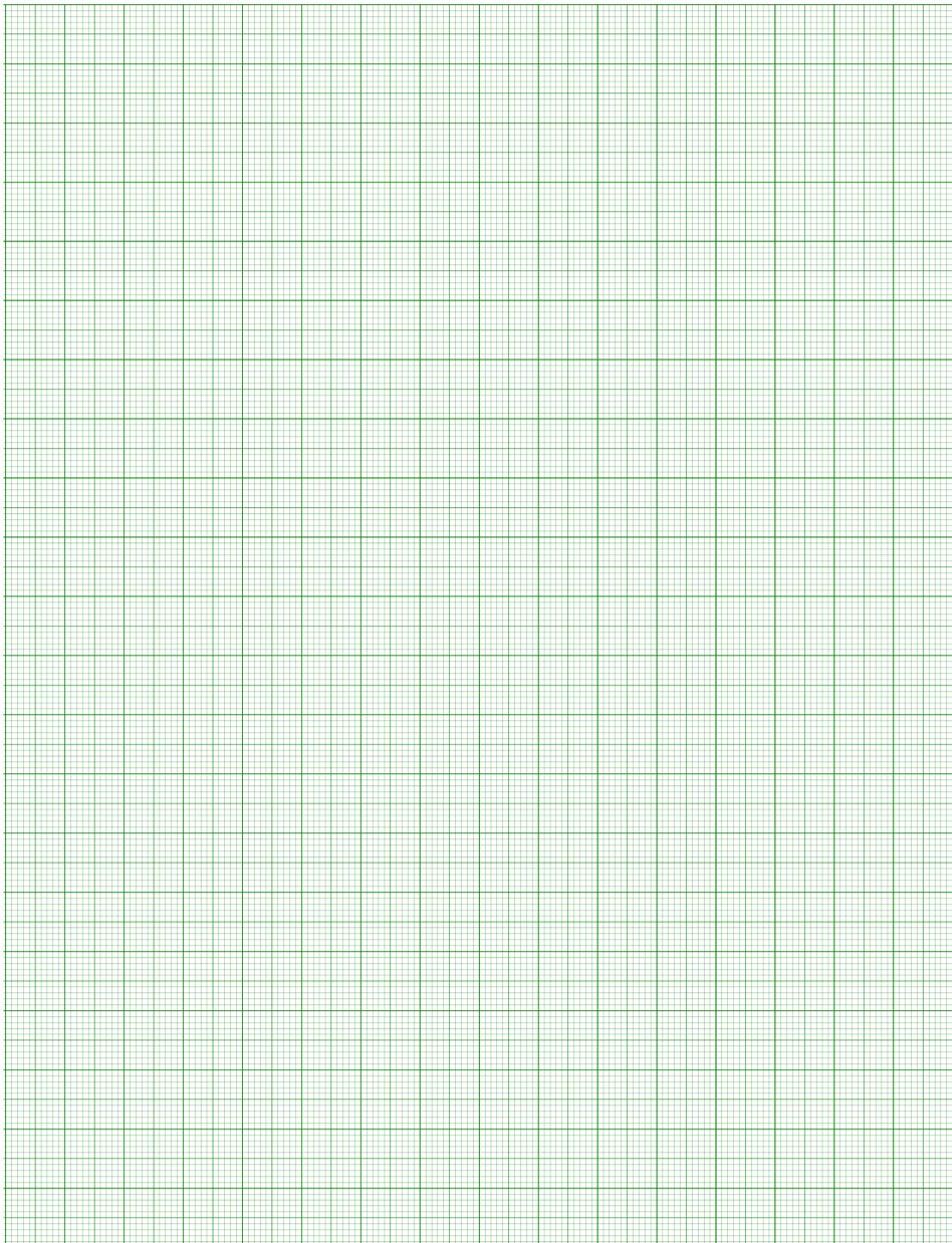
Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-3

Japanese-Experiments (Japan)

1.2 (cont.)



Experimental Exam



Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-4

Japanese-Experiments (Japan)

1.2 (cont.)



$(C = 470 \text{ nF}), L =$

$(C = 2200 \mu\text{F}), L =$

Experimental Exam



Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-5

Japanese-Experiments (Japan)

1.3 (0.5 pt)

Experimental Exam



Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-6

Japanese-Experiments (Japan)

1.4 (1.4 pt)

Experimental Exam



Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-7

Japanese-Experiments (Japan)

1.4 (cont.)

Experimental Exam



Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-8

Japanese-Experiments (Japan)

1.4 (cont.)

Experimental Exam



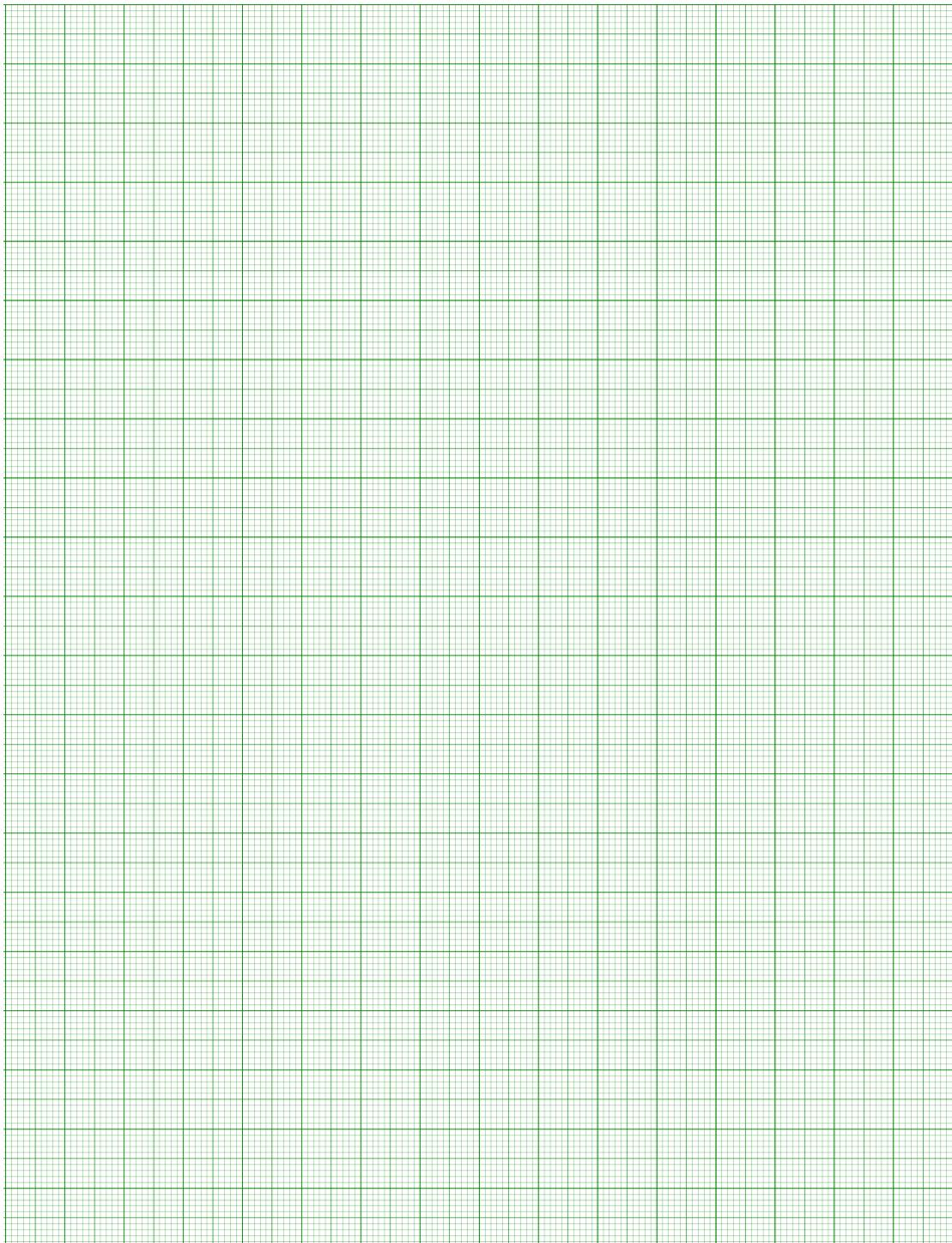
Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-9

Japanese-Experiments (Japan)

1.4 (cont.)



Experimental Exam



Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-10

Japanese-Experiments (Japan)

1.4 (cont.)

Experimental Exam



Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-11

Japanese-Experiments (Japan)

1.5 (1 pt)

$$L(\text{average}) =$$

$$R_L(\text{average}) =$$

C.2. 相互誘導と表皮深さ (8.1 pts)

2.1 (0.4 pt)

2.2 (1 pt)

Experimental Exam



Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-12

Japanese-Experiments (Japan)

2.2 (cont.)

Experimental Exam



Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-13

Japanese-Experiments (Japan)

2.2 (cont.)

A large rectangular grid of graph paper, consisting of approximately 20 columns and 30 rows of small squares, intended for students to draw graphs or plots.

Experimental Exam



Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

Dhahran - Saudi Arabia 2025

A1-14

Japanese-Experiments (Japan)

Japanese-Experiments (Japan)

2.3 (0.4 pt)

$$M =$$

$$M =$$

2.4 (5.5 pt)

Experimental Exam



 APhO

Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-15

Japanese-Experiments (Japan)

2.4 (cont.)

Experimental Exam



Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-16

Japanese-Experiments (Japan)

2.4 (cont.)

Experimental Exam



Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-17

Japanese-Experiments (Japan)

2.4 (cont.)

Experimental Exam



Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-18

Japanese-Experiments (Japan)

2.4 (cont.)

Experimental Exam



Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-19

Japanese-Experiments (Japan)

2.4 (cont.)

The grid consists of 20 columns and 20 rows of small squares, providing a coordinate system for scientific plotting.

Experimental Exam



Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-20
Japanese-Experiments (Japan)

2.4 (cont.)

良いデータが得られない金属を 1 つ選んでチェックマークを付けよ:

SS410

SS304

Cu

Al

$n =$

$n =$

$n =$

2.5 (0.2 pt)

$m =$

2.6 (0.6 pt)

$\sigma =$

$\sigma =$

$\sigma =$

C.3. : 比熱（比熱容量）と実効負荷抵抗 (7.4 pts)

3.1 (0.2 pt)

3.2 (0.5 pt)

Experimental Exam



 APhO

Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-21

Japanese-Experiments (Japan)

3.3 (1.5 pt)

Experimental Exam



Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-22

Japanese-Experiments (Japan)

3.3 (cont.)

$c_{Al} =$

Experimental Exam



 APhO

Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-23

Japanese-Experiments (Japan)

3.4 (1.5 pt)

Experimental Exam



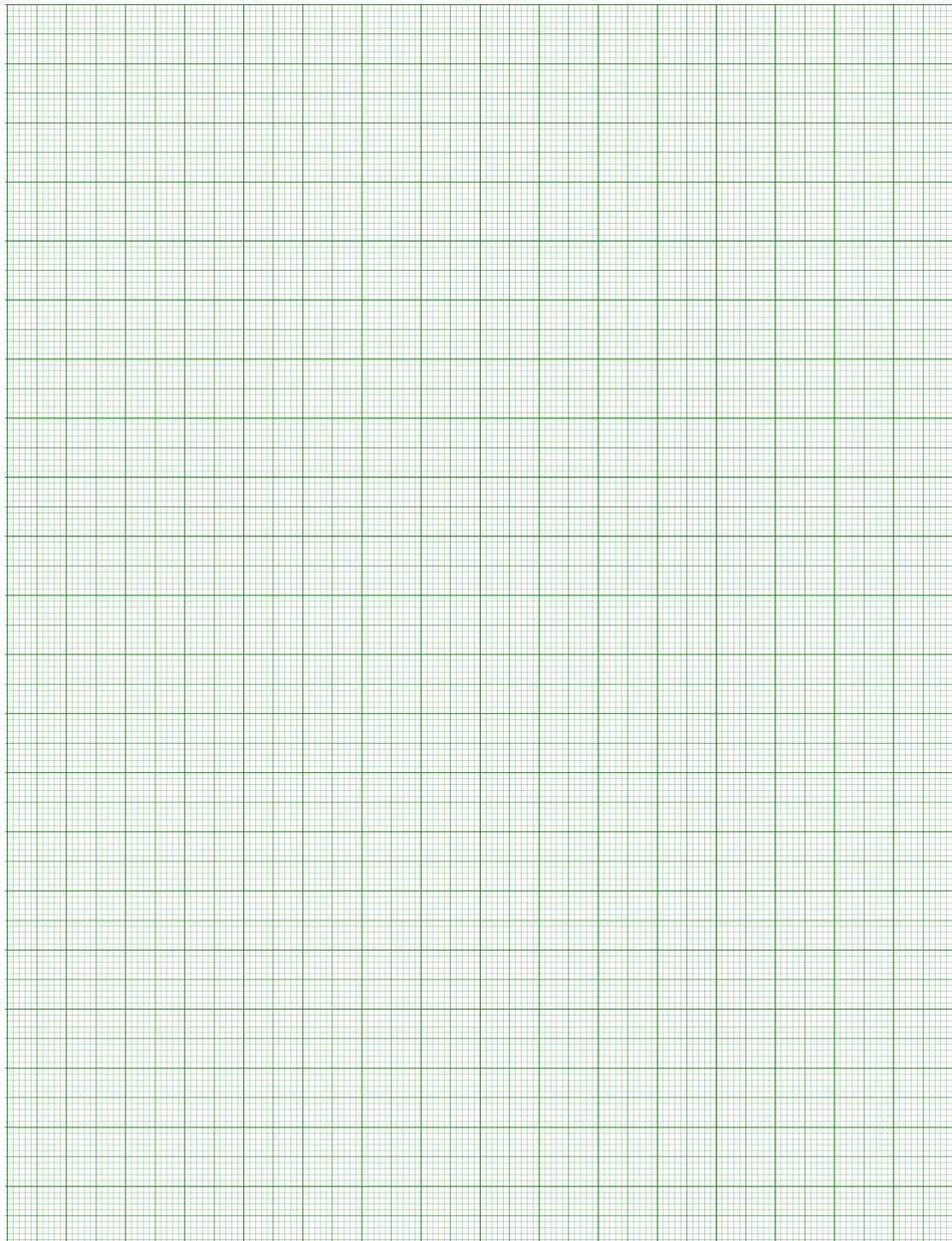
Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-24

Japanese-Experiments (Japan)

3.4 (cont.)



$c_{SS410} =$

Experimental Exam



 APhO

Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-25

Japanese-Experiments (Japan)

3.5 (1.6 pt)

Experimental Exam



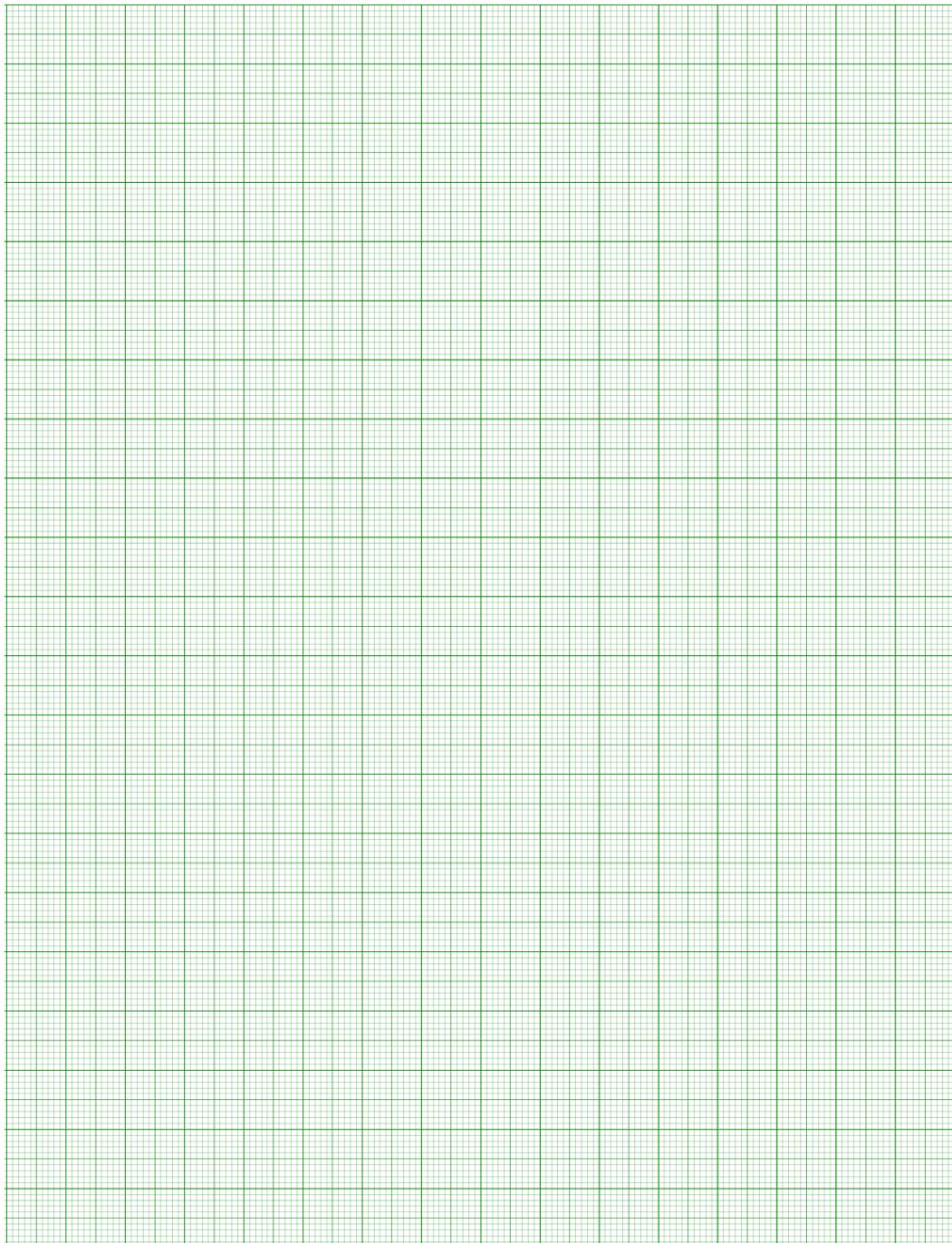
Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-26

Japanese-Experiments (Japan)

3.5 (cont.)



$R_{LOAD} =$

Experimental Exam



 APhO

Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-27

Japanese-Experiments (Japan)

3.6 (1.5 pt)

Experimental Exam



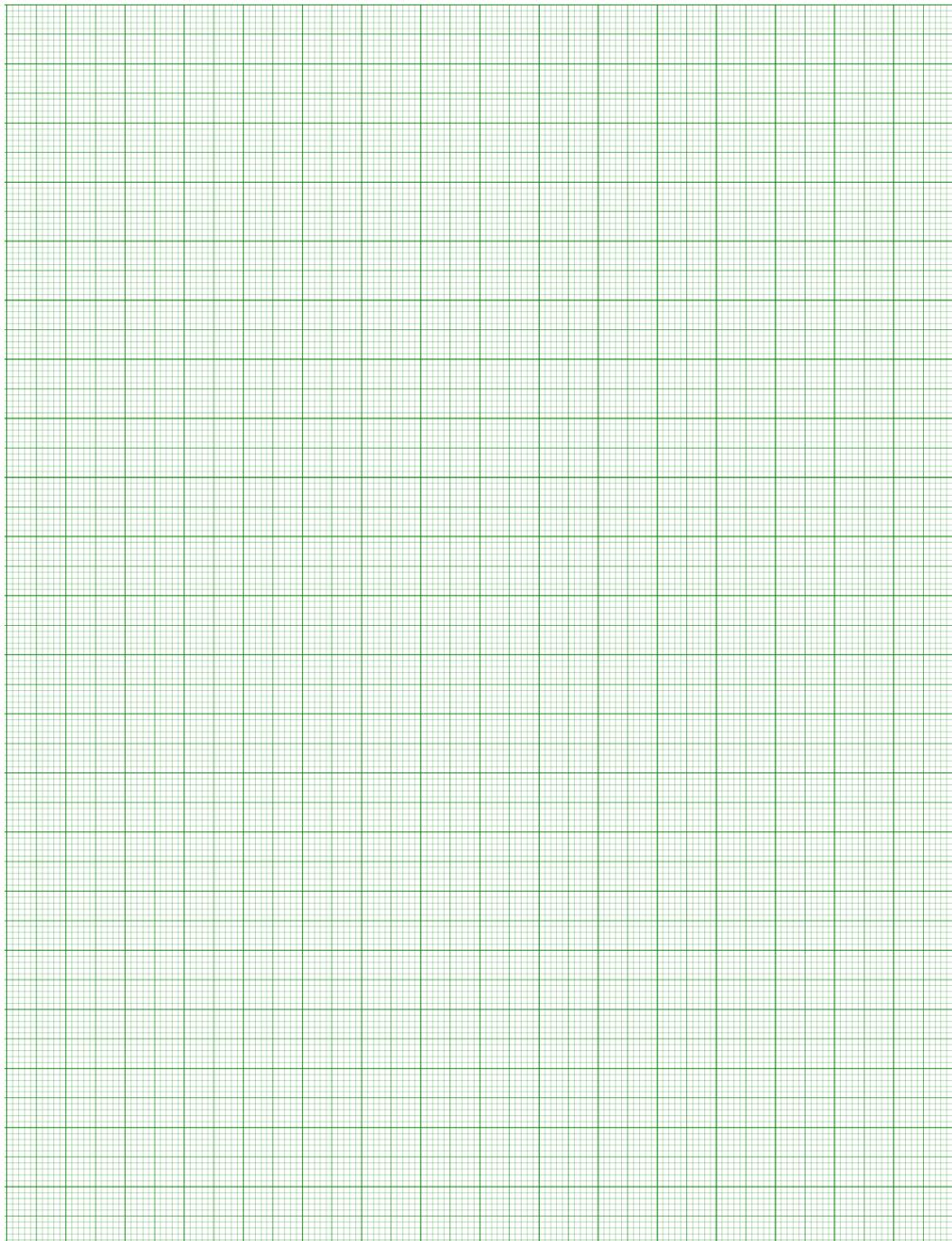
Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-28

Japanese-Experiments (Japan)

3.6 (cont.)



$R_{LOAD} =$

Experimental Exam



Asian Physics Olympiad

Dhahran - Saudi Arabia 2025

A1-29

Japanese-Experiments (Japan)

3.7 (0.1 pt)

(a)

(b)

3.8 (0.1 pt)

(a)

(b)

(c)

(d)

(e)

3.9 (0.4 pt)

$\eta_{Al} =$

$\eta_{SS410} =$