

# Scoring Guidelines

Fight (Round no.): 1 Room: B Stage: 1 Problem no.: 14

Juror: Hong Jung Signature: [Signature]

## A report should include:

- a **presentation** of the appropriate **concepts, theories and principles** of the problem • an **explanation** of the **observed phenomena** • an **application** of **appropriate mathematics** • reasonable **experimental technique** to **gather and record data** (or **demonstrate the phenomena** if appropriate) • linking of **theoretical** and **experimental findings** to draw **suitable conclusions** • an attempt to communicate **difficult** or **complex** ideas in an **effective** and **understandable** manner

## An opposition should show that:

- the opponent **challenged** the **reporter's understanding** of the presented **concepts, theories and principles** • the opponent understood the **appropriate mathematics** presented • the opponent **critiqued** the **experimental technique** used and questioned the **validity** of the **data** • the opponent appreciated and highlighted the **strengths and weaknesses** of the report

## A review should show that:

- the reviewer succeeded in giving an **objective summary** of the performances the **reporter and opponent** • the reviewer appreciated the **important aspects** (especially the **controversial** ones) • the reviewer's **personal opinion** was in evidence (**not just superficial observations**) • such personal opinions were **informative, non-trivial** and demonstrated, where possible, the reviewer's **understanding of concepts, theories, principles and appropriate mathematics** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for **physics, presentation** and for their **specific role**.
- The **reporter, opponent** and **reviewer** each **start with 5 points**.
- Consider the following **suggestions** to **add** to or **deduct** from the initial **5 points**.
- Select each partial grade from each section and **write it** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Geck Rep 5

### Physics $\pm 3$

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

- ☒ Clear and understandable
- ☐ Appropriate manner
- ☒ Overall impression

### Reporter $\pm 1$

- ☒ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☒ Appropriate models, conformity of dimensions
- ☒ Slides, on-site experiments, audio, video as appropriate
- ☒ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Opp.: Indonesia 5

### Physics $\pm 3$

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

- ☒ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Opponent $\pm 1$

- ☒ Response to the reporter's solution
- ☒ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Rev.: Brazil 5

### Physics $\pm 3$

- ☐ Correct and relevant physics
- ☒ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

- ☒ Clear and understandable
- ☒ Appropriate manner
- ☒ Overall impression

### Reviewer $\pm 1$

- ☐ Provides a thorough review of report and discussion
- ☒ Expresses own opinion about topics presented or discussed
- ☒ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reporter

4

Final Grade: Opponent

4

Final Grade: Reviewer

4

# Scoring Guidelines

Fight (Round no.): 4 Room: B Stage: 1 Problem no.: 14

Juror: Peter Reinher Signature: Peter Reinher

Ref. 12.13.17

## A report should include:

- a **presentation** of the appropriate **concepts, theories and principles** of the problem • an **explanation** of the **observed phenomena** • an **application** of **appropriate mathematics** • reasonable **experimental technique** to **gather** and **record data** (or **demonstrate** the **phenomena** if appropriate) • linking of **theoretical** and **experimental findings** to draw **suitable conclusions** • an attempt to communicate **difficult** or **complex** ideas in an **effective** and **understandable** manner

## An opposition should show that:

- the opponent **challenged** the **reporter's understanding** of the presented **concepts, theories and principles** • the opponent understood the **appropriate mathematics** presented • the opponent **critiqued** the **experimental technique** used and questioned the **validity** of the **data** • the opponent appreciated and highlighted the **strengths and weaknesses** of the report

## A review should show that:

- the reviewer succeeded in giving an **objective summary** of the performances the **reporter and opponent** • the reviewer appreciated the **important aspects** (especially the **controversial** ones) • the reviewer's **personal opinion** was in evidence (**not just superficial observations**) • such personal opinions were **informative, non-trivial** and demonstrated, where possible, the reviewer's **understanding** of **concepts, theories, principles and appropriate mathematics** used by the reporter and the opponent

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- Select each partial grade from each section and **write it** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Jakob Polzer  
Tech Rep

5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

++0

### Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Reporter ±1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

4

Final Grade: Reporter

Opp.: Linedi  
Indonesian

5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

0+0

### Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Opponent ±1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

0000

Final Grade: Opponent

Rev.: Jose Gabriel Tama  
Brazil

5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

+++

### Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Reviewer ±1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

++

Final Grade: Reviewer

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

# Scoring Guidelines

Fight (Round no.): 4 Room: B Stage: 1 Problem no.: 14

Juror: FRANCISCO Signature: [Signature]  
SWAMINATHAN

## A report should include:

- a **presentation** of the appropriate **concepts, theories and principles** of the problem • an **explanation** of the **observed phenomena** • an **application** of **appropriate mathematics** • reasonable **experimental technique** to **gather** and **record data** (or **demonstrate** the **phenomena** if appropriate) • linking of **theoretical** and **experimental findings** to draw **suitable conclusions** • an attempt to communicate **difficult** or **complex** ideas in an **effective** and **understandable** manner

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Rep.: CZECH 5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☒ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Reporter ±1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☒ Explanation of formulae and symbols no formula
- ☐ Appropriate models, conformity of dimensions
- ☒ Slides, on-site experiments, audio, video, as appropriate
- ☒ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Opp.: INDONESIA 5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☒ Clear and understandable
- ☒ Appropriate manner
- ☐ Overall impression

### Opponent ±1

- ☒ Response to the reporter's solution
- ☒ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☒ Relevance of the questions
- ☐ Contribution to the discussion

Rev.: BRAZIL 5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☒ Clear and understandable
- ☒ Appropriate manner
- ☐ Overall impression

### Reviewer ±1

- ☐ Provides a thorough review of report and discussion
- ☒ Expresses own opinion about topics presented or discussed
- ☒ Relevance of questions to both the reporter and the opponent
- ☒ Draws attention to points missed by the reporter or the opponent

hgt & h<sub>0</sub>  
This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reporter

5

Final Grade: Opponent

5

Final Grade: Reviewer

7

# Scoring Guidelines

Fight (Round no.): 4 Room: B Stage: 1 Problem no.: 14

Juror: Nimit Russadee Signature: [Signature]

Ref. 12.13.17

## A report should include:

- a **presentation** of the appropriate **concepts, theories and principles** of the problem • an **explanation** of the **observed phenomena** • an **application** of **appropriate mathematics** • reasonable **experimental technique** to **gather** and **record data** (or **demonstrate** the **phenomena** if appropriate) • linking of **theoretical** and **experimental findings** to draw **suitable conclusions** • an attempt to communicate **difficult** or **complex** ideas in an **effective** and **understandable** manner

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- the opponent **challenged** the **reporter's understanding** of the presented **concepts, theories and principles** • the opponent understood the **appropriate mathematics** presented • the opponent **critiqued** the **experimental technique** used and questioned the **validity** of the **data** • the opponent appreciated and highlighted the **strengths and weaknesses** of the report

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- the reviewer succeeded in giving an **objective summary** of the performances the **reporter and opponent** • the reviewer appreciated the **important aspects** (especially the **controversial** ones) • the reviewer's **personal opinion** was in evidence (**not just superficial observations**) • such personal opinions were **informative, non-trivial** and demonstrated, where possible, the reviewer's **understanding of concepts, theories, principles and appropriate mathematics** used by the reporter and the opponent

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Rep.: Czech 5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Reporter ±1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter

4

Opp.: Indonesia 5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Opponent ±1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent

5

Rev.: Brazil 5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Reviewer ±1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please  
**do not bend**

Final Grade: Reviewer

6

# Scoring Guidelines

Fight (Round no.): 4 Room: B Stage: 1 Problem no.: 14

Juror: Kya MARCHEPO Signature: \_\_\_\_\_

Ref: 12.13.17

## A report should include:

- a **presentation** of the appropriate **concepts, theories and principles** of the problem
- an **explanation** of the **observed phenomena**
- an **application** of **appropriate mathematics**
- reasonable **experimental technique** to **gather** and **record data** (or **demonstrate** the **phenomena** if appropriate)
- linking of **theoretical** and **experimental findings** to draw **suitable conclusions**
- an attempt to communicate **difficult** or **complex** ideas in an **effective** and **understandable** manner

## An opposition should show that:

- the opponent **challenged** the **reporter's understanding** of the presented **concepts, theories and principles**
- the opponent understood the **appropriate mathematics** presented
- the opponent **critiqued** the **experimental technique** used and questioned the **validity** of the **data**
- the opponent appreciated and highlighted the **strengths and weaknesses** of the report

## A review should show that:

- the reviewer succeeded in giving an **objective summary** of the performances the **reporter and opponent**
- the reviewer appreciated the **important aspects** (especially the **controversial** ones)
- the reviewer's **personal opinion** was in evidence (**not just superficial observations**)
- such personal opinions were **informative, non-trivial** and demonstrated, where possible, the reviewer's **understanding** of **concepts, theories, principles and appropriate mathematics** used by the reporter and the opponent

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- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Geektop 5

### Physics $\pm 3$

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Reporter $\pm 1$

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter

6

Opp.: Indonesia 5

### Physics $\pm 3$

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Opponent $\pm 1$

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent

5

Rev.: Brazil 5

### Physics $\pm 3$

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Reviewer $\pm 1$

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please  
**do not bend**

Final Grade: Reviewer

6

# Scoring Guidelines

Fight (Round no.): 4 Room: B Stage: 1 Problem no.: 14

Juror: Dina Izadi Signature: [Signature]

## A report should include:

- a **presentation** of the appropriate **concepts, theories and principles** of the problem • an **explanation** of the **observed phenomena** • an **application** of **appropriate mathematics** • reasonable **experimental technique** to **gather** and **record data** (or **demonstrate** the **phenomena** if appropriate) • linking of **theoretical** and **experimental findings** to draw **suitable conclusions** • an attempt to communicate **difficult** or **complex** ideas in an **effective** and **understandable** manner

## An opposition should show that:

- the opponent **challenged** the **reporter's understanding** of the presented **concepts, theories and principles** • the opponent understood the **appropriate mathematics** presented • the opponent **critiqued** the **experimental technique** used and questioned the **validity** of the **data** • the opponent appreciated and highlighted the **strengths and weaknesses** of the report

## A review should show that:

- the reviewer succeeded in giving an **objective summary** of the performances the **reporter and opponent** • the reviewer appreciated the **important aspects** (especially the **controversial** ones) • the reviewer's **personal opinion** was in evidence (**not just superficial observations**) • such personal opinions were **informative, non-trivial** and demonstrated, where possible, the reviewer's **understanding** of **concepts, theories, principles and appropriate mathematics** used by the reporter and the opponent

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- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Czech Republic 5

Jakub

Physics  $\pm 3$  -1

- ☒ Correct and relevant physics
- ☒ Scientific approach
- ☒ Validity of conclusions
- ☐ Accurate answers

Presentation  $\pm 1$  0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter  $\pm 1$  0

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter

4

Opp.: Indonesia 5

Limardi

Physics  $\pm 3$  -1

- ☒ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation  $\pm 1$  0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent  $\pm 1$  0

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent

4

Rev.: Brazil 5

Gabriel

Physics  $\pm 3$  1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation  $\pm 1$  0.25

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer  $\pm 1$  -0.25

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please  
**do not bend**

Final Grade: Reviewer

6

# Scoring Guidelines

Fight (Round no.): 4 Room: B Stage: 2 Problem no.: 3

Juror: Hong Jung Signature: [Signature]

Rejected: 1, 8

## A report should include:

- a **presentation** of the appropriate **concepts, theories and principles** of the problem • an **explanation** of the **observed phenomena** • an **application** of **appropriate mathematics** • reasonable **experimental technique** to **gather** and **record data** (or **demonstrate** the **phenomena** if appropriate) • linking of **theoretical** and **experimental findings** to draw **suitable conclusions** • an attempt to communicate **difficult** or **complex** ideas in an **effective** and **understandable** manner

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- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Indonesia 5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☒ Clear and understandable
- ☐ Appropriate manner
- ☒ Overall impression

### Reporter ±1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☒ Explanation of formulae and symbols
- ☒ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter

Opp.: Brazil 5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☒ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Opponent ±1

- ☐ Response to the reporter's solution
- ☒ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☒ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent

Rev.: Fock Rep 5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☒ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Reviewer ±1

- ☐ Provides a thorough review of report and discussion
- ☒ Expresses own opinion about topics presented or discussed
- ☒ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer



# Scoring Guidelines

Fight (Round no.): 4 Room: B Stage: 2 Problem no.: 3

Juror: Peter Bernhofer Signature: P. Bernhofer

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- Select each partial grade from each section and **write it** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Khat Dafni  
Indonesia

5

### Physics ±3

- ☒ Correct and relevant physics
- ☒ Scientific approach
- ☒ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☒ Clear and understandable
- ☒ Appropriate manner
- ☒ Overall impression

### Reporter ±1

- ☒ Quality of experimental technique(s)
- ☐ Structure
- ☒ Explanation of formulae and symbols
- ☒ Appropriate models, conformity of dimensions
- ☒ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☒ Contribution to the discussion

Final Grade: Reporter

7

Opp.: Burkara Sanhaja  
Breue

5

### Physics ±3

- ☒ Correct and relevant physics
- ☒ Scientific approach
- ☒ Validity of conclusions
- ☒ Accurate answers

### Presentation ±1

- ☒ Clear and understandable
- ☒ Appropriate manner
- ☒ Overall impression

### Opponent ±1

- ☒ Response to the reporter's solution
- ☒ Shows the strong and weak points of the report
- ☒ Finds shortcomings or errors in the report
- ☒ Relevance of the questions
- ☒ Contribution to the discussion

Final Grade: Opponent

6

Rev.: Tomáš Zahradník  
Czech R.

5

### Physics ±3

- ☒ Correct and relevant physics
- ☒ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☒ Clear and understandable
- ☒ Appropriate manner
- ☒ Overall impression

### Reviewer ±1

- ☒ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please  
**do not bend**

Final Grade: Reviewer

6



# Scoring Guidelines

Fight (Round no.): 4 Room: B Stage: 2 Problem no.: 03

Juror: FRANCISCO SWAMINATHAN Signature: [Signature]

## A report should include:

- a **presentation** of the appropriate **concepts, theories and principles** of the problem • an **explanation** of the **observed phenomena** • an **application** of **appropriate mathematics** • reasonable **experimental technique** to **gather** and **record data** (or **demonstrate** the **phenomena** if appropriate) • linking of **theoretical** and **experimental findings** to draw **suitable conclusions** • an attempt to communicate **difficult** or **complex** ideas in an **effective** and **understandable** manner

## An opposition should show that:

- the opponent **challenged** the **reporter's understanding** of the presented **concepts, theories and principles** • the opponent understood the **appropriate mathematics** presented • the opponent **critiqued** the **experimental technique** used and questioned the **validity** of the **data** • the opponent appreciated and highlighted the **strengths and weaknesses** of the report

## A review should show that:

- the reviewer succeeded in giving an **objective summary** of the performances the **reporter and opponent** • the reviewer appreciated the **important aspects** (especially the **controversial** ones) • the reviewer's **personal opinion** was in evidence (**not just superficial observations**) • such personal opinions were **informative, non-trivial** and demonstrated, where possible, the reviewer's **understanding of concepts, theories, principles and appropriate mathematics** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for **physics, presentation** and for their **specific role**.
- The **reporter, opponent** and **reviewer** each **start with 5 points**.
- Consider the following **suggestions** to **add** to or **deduct** from the initial **5 points**.
- Select each partial grade from each section and **write it** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: INDONESIA 5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☒ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Reporter ±1

- ☒ Quality of experimental technique(s)
- ☐ Structure
- ☒ Explanation of formulae and symbols
- ☒ Appropriate models, conformity of dimensions
- ☒ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter

Opp.: BRAZIL 5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☒ Clear and understandable
- ☒ Appropriate manner
- ☐ Overall impression

### Opponent ±1

- ☒ Response to the reporter's solution
- ☒ Shows the strong and weak points of the report
- ☒ Finds shortcomings or errors in the report
- ☒ Relevance of the questions
- ☒ Contribution to the discussion

Final Grade: Opponent

Rev.: CZECH 5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☒ Clear and understandable
- ☒ Appropriate manner
- ☒ Overall impression

### Reviewer ±1

- ☒ Provides a thorough review of report and discussion
- ☒ Expresses own opinion about topics presented or discussed
- ☒ Relevance of questions to both the reporter and the opponent
- ☒ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please  
**do not bend**

Final Grade: Reviewer

# Scoring Guidelines

Fight (Round no.): 4 Room: B Stage: 2 Problem no.: 3

Juror: Nirut Pussadee Signature: [Signature]

## A report should include:

- a **presentation** of the appropriate **concepts, theories and principles** of the problem • an **explanation** of the **observed phenomena** • an **application** of **appropriate mathematics** • reasonable **experimental technique** to **gather** and **record data** (or **demonstrate** the **phenomena** if appropriate) • linking of **theoretical** and **experimental findings** to draw **suitable conclusions** • an attempt to communicate **difficult** or **complex** ideas in an **effective** and **understandable** manner

## An opposition should show that:

- the opponent **challenged** the **reporter's understanding** of the presented **concepts, theories and principles** • the opponent understood the **appropriate mathematics** presented • the opponent **critiqued** the **experimental technique** used and questioned the **validity** of the **data** • the opponent appreciated and highlighted the **strengths and weaknesses** of the report

## A review should show that:

- the reviewer succeeded in giving an **objective summary** of the performances the **reporter and opponent** • the reviewer appreciated the **important aspects** (especially the **controversial** ones) • the reviewer's **personal opinion** was in evidence (**not just superficial observations**) • such personal opinions were **informative, non-trivial** and demonstrated, where possible, the reviewer's **understanding** of **concepts, theories, principles and appropriate mathematics** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for **physics, presentation** and for their **specific role**.
- The **reporter, opponent** and **reviewer** each **start with 5 points**.
- Consider the following **suggestions** to **add** to or **deduct** from the initial **5 points**.
- Select each partial grade from each section and **write it** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Indonesia

5

### Physics $\pm 3$

-0.5

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Reporter $\pm 1$

-0.5

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Opp.: Brazil

5

### Physics $\pm 3$

1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Opponent $\pm 1$

1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Rev.: Czech

5

### Physics $\pm 3$

+1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Reviewer $\pm 1$

-1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please  
**do not bend**

Final Grade: Reporter

4

Final Grade: Opponent

7

Final Grade: Reviewer

5

# Scoring Guidelines

Fight (Round no.): 4 Room: B Stage: 2 Problem no.: \_\_\_\_\_

Juror: Ilya MARTCHENKO Signature: \_\_\_\_\_

## A report should include:

- a **presentation** of the appropriate **concepts, theories and principles** of the problem
- an **explanation** of the **observed phenomena**
- an **application** of **appropriate mathematics**
- reasonable **experimental technique** to **gather** and **record data** (or **demonstrate** the **phenomena** if appropriate)
- linking of **theoretical** and **experimental findings** to draw **suitable conclusions**
- an attempt to communicate **difficult** or **complex** ideas in an **effective** and **understandable** manner

## An opposition should show that:

- the opponent **challenged** the **reporter's understanding** of the presented **concepts, theories and principles**
- the opponent understood the **appropriate mathematics** presented
- the opponent **critiqued** the **experimental technique** used and questioned the **validity** of the **data**
- the opponent appreciated and highlighted the **strengths and weaknesses** of the report

## A review should show that:

- the reviewer succeeded in giving an **objective summary** of the performances the **reporter and opponent**
- the reviewer appreciated the **important aspects** (especially the **controversial** ones)
- the reviewer's **personal opinion** was in evidence (**not just superficial observations**)
- such personal opinions were **informative, non-trivial** and demonstrated, where possible, the reviewer's **understanding** of **concepts, theories, principles and appropriate mathematics** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for **physics, presentation** and for their **specific role**.
- The **reporter, opponent** and **reviewer** each **start with 5 points**.
- Consider the following **suggestions** to **add** to or **deduct** from the initial **5 points**.
- Select each partial grade from each section and **write it** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Indonesia 5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Reporter ±1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter

Opp.: Brazil 5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Opponent ±1

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent

Rev.: Czech Rep. 5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Reviewer ±1

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please  
**do not bend**

Final Grade: Reviewer

# Scoring Guidelines

Fight (Round no.): 4 Room: B Stage: 2 Problem no.: 3

Juror: Dina Izadi Signature: Izadi

## A report should include:

- a **presentation** of the appropriate **concepts, theories and principles** of the problem • an **explanation** of the **observed phenomena** • an **application** of **appropriate mathematics** • reasonable **experimental technique** to **gather** and **record data** (or **demonstrate** the **phenomena** if appropriate) • linking of **theoretical** and **experimental findings** to draw **suitable conclusions** • an attempt to communicate **difficult** or **complex** ideas in an **effective** and **understandable** manner

## An opposition should show that:

- the opponent **challenged** the **reporter's understanding** of the presented **concepts, theories and principles** • the opponent understood the **appropriate mathematics** presented • the opponent **critiqued** the **experimental technique** used and questioned the **validity** of the **data** • the opponent appreciated and highlighted the **strengths and weaknesses** of the report

## A review should show that:

- the reviewer succeeded in giving an **objective summary** of the performances the **reporter and opponent** • the reviewer appreciated the **important aspects** (especially the **controversial** ones) • the reviewer's **personal opinion** was in evidence (**not just superficial observations**) • such personal opinions were **informative, non-trivial** and demonstrated, where possible, the reviewer's **understanding** of **concepts, theories, principles and appropriate mathematics** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for **physics, presentation** and for their **specific role**.
- The **reporter, opponent** and **reviewer** each **start with 5 points**.
- Consider the following **suggestions** to **add** to or **deduct** from the initial **5 points**.
- Select each partial grade from each section and **write it** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Indonesia 5  
Albert

Physics  $\pm 3$  0.25

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation  $\pm 1$  0.25

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reporter  $\pm 1$  0

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter

5

Opp.: Brazil 5  
Barbara

Physics  $\pm 3$  0

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation  $\pm 1$  0.25

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Opponent  $\pm 1$  0.25

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent

5

Rev.: Czech 5  
Tomas

Physics  $\pm 3$  1

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

Presentation  $\pm 1$  0

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

Reviewer  $\pm 1$  0

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer

4

# Scoring Guidelines

Fight (Round no.): 4 Room: B Stage: 3 Problem no.: 11

Juror: Hong Jung Signature: [Signature]

Rejected: 2

## A report should include:

- a **presentation** of the appropriate **concepts, theories and principles** of the problem • an **explanation** of the **observed phenomena** • an **application** of **appropriate mathematics** • reasonable **experimental technique** to **gather** and **record data** (or **demonstrate** the **phenomena** if appropriate) • linking of **theoretical** and **experimental findings** to draw **suitable conclusions** • an attempt to communicate **difficult** or **complex** ideas in an **effective** and **understandable** manner

## An opposition should show that:

- the opponent **challenged** the **reporter's understanding** of the presented **concepts, theories and principles** • the opponent understood the **appropriate mathematics** presented • the opponent **critiqued** the **experimental technique** used and questioned the **validity** of the **data** • the opponent appreciated and highlighted the **strengths and weaknesses** of the report

## A review should show that:

- the reviewer succeeded in giving an **objective summary** of the performances the **reporter and opponent** • the reviewer appreciated the **important aspects** (especially the **controversial** ones) • the reviewer's **personal opinion** was in evidence (**not just superficial observations**) • such personal opinions were **informative, non-trivial** and demonstrated, where possible, the reviewer's **understanding of concepts, theories, principles and appropriate mathematics** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for **physics, presentation** and for their **specific role**.
- The **reporter, opponent** and **reviewer** each **start with 5 points**.
- Consider the following **suggestions** to **add** to or **deduct** from the initial **5 points**.
- Select each partial grade from each section and **write it** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Brazil 5

### Physics $\pm 3$

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

- ☒ Clear and understandable
- ☐ Appropriate manner
- ☒ Overall impression

### Reporter $\pm 1$

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☒ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☒ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter

Opp.: Gedr Rep 5

### Physics $\pm 3$

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

- ☒ Clear and understandable
- ☐ Appropriate manner
- ☒ Overall impression

### Opponent $\pm 1$

- ☒ Response to the reporter's solution
- ☒ Shows the strong and weak points of the report
- ☒ Finds shortcomings or errors in the report
- ☒ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent

Rev.: Indonesia 5

### Physics $\pm 3$

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☒ Overall impression

### Reviewer $\pm 1$

- ☒ Provides a thorough review of report and discussion
- ☒ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please  
**do not bend**

Final Grade: Reviewer

# Scoring Guidelines

Fight (Round no.): 4 Room: B Stage: 3 Problem no.: 11  
 Juror: Peter Remmel Signature: Peter Remmel

## A report should include:

- a **presentation** of the appropriate **concepts, theories and principles** of the problem • an **explanation** of the **observed phenomena** • an **application** of **appropriate mathematics** • reasonable **experimental technique** to **gather** and **record data** (or **demonstrate** the **phenomena** if appropriate) • linking of **theoretical** and **experimental findings** to draw **suitable conclusions** • an attempt to communicate **difficult** or **complex** ideas in an **effective** and **understandable** manner

## An opposition should show that:

- the opponent **challenged** the **reporter's understanding** of the presented **concepts, theories and principles** • the opponent understood the **appropriate mathematics** presented • the opponent **critiqued** the **experimental technique** used and questioned the **validity** of the **data** • the opponent appreciated and highlighted the **strengths and weaknesses** of the report

## A review should show that:

- the reviewer succeeded in giving an **objective summary** of the performances the **reporter and opponent** • the reviewer appreciated the **important aspects** (especially the **controversial** ones) • the reviewer's **personal opinion** was in evidence (**not just superficial observations**) • such personal opinions were **informative, non-trivial** and demonstrated, where possible, the reviewer's **understanding** of **concepts, theories, principles and appropriate mathematics** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for **physics, presentation** and for their **specific role**.
- The **reporter, opponent** and **reviewer** each **start with 5 points**.
- Consider the following **suggestions** to **add** to or **deduct** from the initial **5 points**.
- Select each partial grade from each section and **write it** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Gara Gurnish  
Brazil

5

### Physics ±3

- ☒ Correct and relevant physics
- ☒ Scientific approach
- ☒ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☒ Clear and understandable
- ☒ Appropriate manner
- ☒ Overall impression

### Reporter ±1

- ☒ Quality of experimental technique(s)
- ☒ Structure
- ☒ Explanation of formulae and symbols
- ☒ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter

6

Opp.: NHAT THUH  
CSIL

5

### Physics ±3

- ☒ Correct and relevant physics
- ☒ Scientific approach
- ☒ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☒ Clear and understandable
- ☒ Appropriate manner
- ☒ Overall impression

### Opponent ±1

- ☐ Response to the reporter's solution
- ☒ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☒ Contribution to the discussion

Final Grade: Opponent

6

Rev.: Samuel W  
Indonesia

5

### Physics ±3

- ☒ Correct and relevant physics
- ☒ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☒ Clear and understandable
- ☒ Appropriate manner
- ☒ Overall impression

### Reviewer ±1

- ☒ Provides a thorough review of report and discussion
- ☒ Expresses own opinion about topics presented or discussed
- ☒ Relevance of questions to both the reporter and the opponent
- ☒ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please  
**do not bend**

Final Grade: Reviewer

5

# Scoring Guidelines

Fight (Round no.): 4 Room: B Stage: 3 Problem no.: 11

Juror: PRANILIA Signature: [Signature]  
SEMINATARI

## A report should include:

- a **presentation** of the appropriate **concepts, theories and principles** of the problem • an **explanation** of the **observed phenomena** • an **application** of **appropriate mathematics** • reasonable **experimental technique** to **gather** and **record data** (or **demonstrate** the **phenomena** if appropriate) • linking of **theoretical** and **experimental findings** to draw **suitable conclusions** • an attempt to communicate **difficult** or **complex** ideas in an **effective** and **understandable** manner

## An opposition should show that:

- the opponent **challenged** the **reporter's understanding** of the presented **concepts, theories and principles** • the opponent understood the **appropriate mathematics** presented • the opponent **critiqued** the **experimental technique** used and questioned the **validity** of the **data** • the opponent appreciated and highlighted the **strengths and weaknesses** of the report

## A review should show that:

- the reviewer succeeded in giving an **objective summary** of the performances the **reporter and opponent** • the reviewer appreciated the **important aspects** (especially the **controversial** ones) • the reviewer's **personal opinion** was in evidence (**not just superficial observations**) • such personal opinions were **informative, non-trivial** and demonstrated, where possible, the reviewer's **understanding** of **concepts, theories, principles and appropriate mathematics** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for **physics, presentation** and for their **specific role**.
- The **reporter, opponent** and **reviewer** each **start with 5 points**.
- Consider the following **suggestions** to **add** to or **deduct** from the initial **5 points**.
- Select each partial grade from each section and **write it** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: BRAZIL 5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☒ Clear and understandable
- ☒ Appropriate manner
- ☐ Overall impression

### Reporter ±1

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☒ Explanation of formulae and symbols
- ☒ Appropriate models, conformity of dimensions
- ☒ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☒ Contribution to the discussion

Final Grade: Reporter

Opp.: CZECH 5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☒ Clear and understandable
- ☒ Appropriate manner
- ☐ Overall impression

### Opponent ±1

- ☒ Response to the reporter's solution
- ☒ Shows the strong and weak points of the report
- ☒ Finds shortcomings or errors in the report
- ☒ Relevance of the questions
- ☒ Contribution to the discussion

Final Grade: Opponent

Rev.: INDONESIA 5

### Physics ±3

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation ±1

- ☒ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Reviewer ±1

- ☐ Provides a thorough review of report and discussion
- ☒ Expresses own opinion about topics presented or discussed
- ☒ Relevance of questions to both the reporter and the opponent
- ☒ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please **do not bend**

Final Grade: Reviewer



# Scoring Guidelines

Fight (Round no.): 4 Room: B Stage: 3 Problem no.: 11

Juror: Nirut Rissadee Signature: Nirut

## A report should include:

- a **presentation** of the appropriate **concepts, theories and principles** of the problem • an **explanation** of the **observed phenomena** • an **application** of **appropriate mathematics** • reasonable **experimental technique** to **gather and record data** (or **demonstrate the phenomena** if appropriate) • linking of **theoretical** and **experimental findings** to draw **suitable conclusions** • an attempt to communicate **difficult** or **complex** ideas in an **effective** and **understandable** manner

## An opposition should show that:

- the opponent **challenged** the **reporter's understanding** of the presented **concepts, theories and principles** • the opponent understood the **appropriate mathematics** presented • the opponent **critiqued** the **experimental technique** used and questioned the **validity** of the **data** • the opponent appreciated and highlighted the **strengths and weaknesses** of the report

## A review should show that:

- the reviewer succeeded in giving an **objective summary** of the performances the **reporter and opponent** • the reviewer appreciated the **important aspects** (especially the **controversial** ones) • the reviewer's **personal opinion** was in evidence (**not just superficial observations**) • such personal opinions were **informative, non-trivial** and demonstrated, where possible, the reviewer's **understanding of concepts, theories, principles and appropriate mathematics** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for **physics, presentation** and for their **specific role**.
- The **reporter, opponent** and **reviewer** each **start with 5 points**.
- Consider the following **suggestions to add** to or **deduct** from the initial **5 points**.
- Select each partial grade from each section and **write it** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Brazil 5

### Physics $\pm 3$

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Reporter $\pm 1$

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter

4

Opp.: Czech 5

### Physics $\pm 3$

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Opponent $\pm 1$

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent

6

Rev.: Indonesia 5

### Physics $\pm 3$

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Reviewer $\pm 1$

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please  
**do not bend**

Final Grade: Reviewer

5

# Scoring Guidelines

Fight (Round no.): 4 Room: B Stage: 2 Problem no.: 11  
 Juror: Ilya MARTCHENKO Signature: \_\_\_\_\_

## A report should include:

- a **presentation** of the appropriate **concepts, theories and principles** of the problem • an **explanation** of the **observed phenomena** • an **application** of **appropriate mathematics** • reasonable **experimental technique** to **gather** and **record data** (or **demonstrate** the **phenomena** if appropriate) • linking of **theoretical** and **experimental findings** to draw **suitable conclusions** • an attempt to communicate **difficult** or **complex** ideas in an **effective** and **understandable** manner

## An opposition should show that:

- the opponent **challenged** the **reporter's understanding** of the presented **concepts, theories and principles** • the opponent understood the **appropriate mathematics** presented • the opponent **critiqued** the **experimental technique** used and questioned the **validity** of the **data** • the opponent appreciated and highlighted the **strengths and weaknesses** of the report

## A review should show that:

- the reviewer succeeded in giving an **objective summary** of the performances the **reporter and opponent** • the reviewer appreciated the **important aspects** (especially the **controversial** ones) • the reviewer's **personal opinion** was in evidence (**not just superficial observations**) • such personal opinions were **informative, non-trivial** and demonstrated, where possible, the reviewer's **understanding** of **concepts, theories, principles and appropriate mathematics** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for **physics, presentation** and for their **specific role**.
- The **reporter, opponent** and **reviewer** each **start with 5 points**.
- Consider the following **suggestions** to **add** to or **deduct** from the initial **5 points**.
- Select each partial grade from each section and **write it** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Brazil 5

### Physics $\pm 3$

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Reporter $\pm 1$

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter

7

Opp.: Czech Rep. 5

### Physics $\pm 3$

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Opponent $\pm 1$

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent

6

Rev.: Indonesia 5

### Physics $\pm 3$

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Reviewer $\pm 1$

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please  
**do not bend**

Final Grade: Reviewer

5

# Scoring Guidelines

Fight (Round no.): 4 Room: B Stage: 3 Problem no.: 11

Juror: Dina Izadi Signature: Izadi

## A report should include:

- a **presentation** of the appropriate **concepts, theories and principles** of the problem • an **explanation** of the **observed phenomena** • an **application** of **appropriate mathematics** • reasonable **experimental technique** to **gather** and **record data** (or **demonstrate** the **phenomena** if appropriate) • linking of **theoretical** and **experimental findings** to draw **suitable conclusions** • an attempt to communicate **difficult** or **complex** ideas in an **effective** and **understandable** manner

## An opposition should show that:

- the opponent **challenged** the **reporter's understanding** of the presented **concepts, theories and principles** • the opponent understood the **appropriate mathematics** presented • the opponent **critiqued** the **experimental technique** used and questioned the **validity** of the **data** • the opponent appreciated and highlighted the **strengths and weaknesses** of the report

## A review should show that:

- the reviewer succeeded in giving an **objective summary** of the performances the **reporter and opponent** • the reviewer appreciated the **important aspects** (especially the **controversial** ones) • the reviewer's **personal opinion** was in evidence (**not just superficial observations**) • such personal opinions were **informative, non-trivial** and demonstrated, where possible, the reviewer's **understanding of concepts, theories, principles and appropriate mathematics** used by the reporter and the opponent

- The grade for each of the three teams consists of a partial grade for **physics, presentation** and for their **specific role**.
- The **reporter, opponent** and **reviewer** each **start with 5 points**.
- Consider the following **suggestions** to **add** to or **deduct** from the initial **5 points**.
- Select each partial grade from each section and **write it** in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

Rep.: Brazil 5

Liana

### Physics $\pm 3$

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Reporter $\pm 1$

- ☐ Quality of experimental technique(s)
- ☐ Structure
- ☐ Explanation of formulae and symbols
- ☐ Appropriate models, conformity of dimensions
- ☐ Slides, on-site experiments, audio, video, as appropriate
- ☐ References, proper citations of ideas and input of others
- ☐ Novelty of the report
- ☐ Contribution to the discussion

Final Grade: Reporter

5

Opp.: Czech 5

What

### Physics $\pm 3$

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Opponent $\pm 1$

- ☐ Response to the reporter's solution
- ☐ Shows the strong and weak points of the report
- ☐ Finds shortcomings or errors in the report
- ☐ Relevance of the questions
- ☐ Contribution to the discussion

Final Grade: Opponent

5

Rev.: Indonesia 5

Samuel

### Physics $\pm 3$

- ☐ Correct and relevant physics
- ☐ Scientific approach
- ☐ Validity of conclusions
- ☐ Accurate answers

### Presentation $\pm 1$

- ☐ Clear and understandable
- ☐ Appropriate manner
- ☐ Overall impression

### Reviewer $\pm 1$

- ☐ Provides a thorough review of report and discussion
- ☐ Expresses own opinion about topics presented or discussed
- ☐ Relevance of questions to both the reporter and the opponent
- ☐ Draws attention to points missed by the reporter or the opponent

This sheet will be collected by the fight assistant, so we can scan it and archive your partial grades – please  
**do not bend**

Final Grade: Reviewer

5