



WESLEYAN SCHOOL CERTIFICATE EXAMINATION

School Name

Section II Answer Booklet

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Student Number

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Centre Number

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Student Number

2022

FINAL EXAMINATION

Physics

80 marks

Attempt Questions 21–35

Allow about 2 hours and 25 minutes for this section

General Instructions

Instructions

- Reading time – 5 minutes
- Working time – 3 hours
- Write using black pen
- Write your Centre Number and Student Number at the top of this page.
- Draw diagrams using pencil
- Calculators approved by NESAs may be used
- Answer the questions in the spaces provided. These spaces provide guidance for the expected length of response.
- A data sheet, formulae sheet and Periodic Table are provided at the back of this paper
- Show all relevant working in questions involving calculations.

Total marks:
8

Section I – 4 marks (pages 2–3)

Extra writing space is provided at the back of this booklet.

- If you use this space, clearly indicate which question you are answering.
- Attempt Questions 1–4
- Allow about 35 minutes for this section

Section II – 4 marks (pages 6–7)

- Attempt Questions 5–6
- Allow about 2 hours and 25 minutes for this section

Please turn over

Section I JUNIOR SCHOOL CERTIFICATE EXAMINATION

4 marks

Attempt Questions 1–4

Allow about 35 minutes for this section

Physics

Use the multiple-choice answer sheet for Questions 1–4.

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Centre Number

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Student Number

Section II Answer Booklet

- 1** A marble is rolled off a horizontal bench and falls to the floor.

80 marks

Attempt Questions 21–35

Allow about 2 hours and 25 minutes for this section

Rolling the marble at a slower speed would

- Instructions**
- A. increase the range.
 - B. decrease the range.
 - C. increase the time of flight.
 - D. decrease the time of flight.

- 2** A positively charged particle is moving at velocity v in an electric field as shown.

Extra writing space is provided at the back of this booklet.
If you use this space, clearly indicate which question you are answering.

What is the direction of the force acting on the particle due to the electric field?

- A. Into the page
- B. Out of the page
- C. Up the page
- D. Down the page

2021 Which of the following is NOT a fundamental particle in the Standard Model of matter?

- A. Electron
B. Gluon
C. Muon
D. Proton

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Centre Number

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Student Number

Physics

Section II Answer Booklet

- 4 An astronaut is travelling towards Earth in a spaceship at $0.8c$. At regular intervals, a radio pulse is sent from the spaceship to an observer on Earth.

Which quantity would the astronaut and the observer measure to be the same?

- A. Length of the spaceship
B. Speed of the radio pulses
C. Momentum of the astronaut
D. Time interval between the radio pulses

80 marks

Attempt Questions 21–35

Allow about 2 hours and 25 minutes for this section

Instructions

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- Answer the questions in the spaces provided. These spaces provide guidance for the expected length of response.
- Show all relevant working in questions involving calculations.
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Centre Number

Physics

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Student Number

Section II Answer Booklet

80 marks

Attempt Questions 21–35

Allow about 2 hours and 25 minutes for this section

Instructions

- Write your Centre Number and Student Number at the top of this page.

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- Answer the questions in the spaces provided. These spaces provide guidance for the expected length of response.
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Centre Number

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Student Number

Physics

Section II Answer Booklet

40 marks

Attempt Questions 5–6

Allow about 2 hours and 25 minutes for this section

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Please turn over

Please turn over

Question 5 (4 marks)

2021 HIGHER SCHOOL CERTIFICATE EXAMINATION

A DC motor is constructed from a single loop of wire with dimensions 0.10 m. The magnetic field strength is 0.40 T and a current of 14 A flows through the loop.

Physics

Section II Answer Booklet

Centre Number

Student Number

80 marks

(a) Calculate the magnitude of the maximum torque produced by the motor.

2

Attempt Questions 21–35

Allow about 2 hours and 25 minutes for this section

Instructions

• Write your Centre Number and Student Number at the top of this page.

(b) Describe how the magnitude of the torque changes as the loop moves through half a rotation from the position shown.

2

• Answer the questions in the spaces provided. These spaces provide guidance for the expected length of response.

• Show all relevant working in questions involving calculations.

• Extra writing space is provided at the back of this booklet.

If you use this space, clearly indicate which question you are answering.

Question 5 continues on page 7

Please turn over

Question 5 (continued)

2021 HIGHER SCHOOL CERTIFICATE EXAMINATION

How do the results from

Physics

Question 6 (0 marks)

Another question

Section II Answer Booklet

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Student Number

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Centre Number

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Student Number

80 marks

Attempt Questions 21–35

Allow about 2 hours and 25 minutes for this section

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Centre Number

Section II extra writing space

If you use this space, clearly indicate which question you are answering.

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Student Number

Physics**Section II Answer Booklet****80 marks****Attempt Questions 21–35****Allow about 2 hours and 25 minutes for this section****Instructions**

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Student Number			

Section II extra writing space

Centre Number

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Physics

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Student Number

Section II Answer Booklet

80 marks

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