CARIBBEAN EXAMINATIONS COUNCIL

CARIBBEAN SECONDARY EDUCATION CERTIFICATE® EXAMINATION

17 JANUARY 2017 (a.m.)

J1701238032

7035

FILL IN ALL THE INFORMATION REQUESTED CLEARLY IN CAPITAL LETTERS.

TEST CODE | 0 | 1 | 2 | 3 | 8 | 0 | 3 | 2 |

SUBJECT PHYSICS – Paper 032

PROFICIENCY GENERAL

REGISTRATION NUMBER | | | | | | | | | | |

SCHOOL/CENTRE NUMBER					

NAME OF SCHOOL/CENTRE

CANDIDATE'S FULL NAME (FIRST, MIDDLE, LAST)

DATE OF BIRTH | | | | | | | | |

SIGNATURE _____

DO NOT
WRITE ON
THIS PAGE

FORM TP 2017023

TEST CODE 01238032

JANUARY 2017

CARIBBEAN EXAMINATIONS COUNCIL

CARIBBEAN SECONDARY EDUCATION CERTIFICATE® EXAMINATION

PHYSICS

Paper 032 – General Proficiency

Alternative to SBA

2 hours 10 minutes

READ THE FOLLOWING INSTRUCTIONS CAREFULLY.

1. This paper consists of THREE questions. Candidates must attempt ALL questions.
2. You MUST use this answer booklet when responding to questions. For each question, write your answer in the space provided and return the answer booklet at the end of the examination.
3. All working MUST be clearly shown.
4. Do NOT write in the margins.
5. You may use a silent, non-programmable calculator, but you should note that the use of an inappropriate number of figures in answers will be penalized.
6. Mathematical tables are provided.
7. You are advised to take some time to read through the paper and plan your answers.
8. If you need to rewrite any answer and there is not enough space to do so on the original page, you must use the extra lined page(s) provided at the back of this booklet. **Remember to draw a line through your original answer.**
9. **If you use the extra page(s) you MUST write the question number clearly in the box provided at the top of the extra page(s) and, where relevant, include the question part beside the answer.**

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

NOTHING HAS BEEN OMITTED.

Attempt ALL questions.

You MUST write your answers in this answer booklet.

1. You have been asked to find the relationship between extension and applied force for a spring using the apparatus set up in Figure 1.

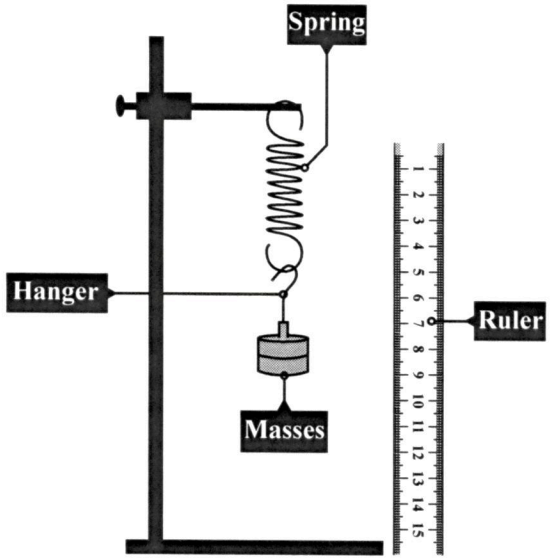


Figure 1

(a) Record an initial reading, l_0, with only the hanger on the spring.

l_0 = ...

(1 mark)

(b) Take and record the readings, l_1, with a 20 g mass on the hanger. Repeat this step with more 20 g masses up to at least 120 g and enter your results in Table 1.

TABLE 1

Mass, *m* (*g*)	**Weight, *F* (*N*)**	**l_1 (cm)**	**Extension, *e* (cm)**
20	0.20		
40			

(5 marks)

(c) State ONE precaution taken to minimize experimental errors.

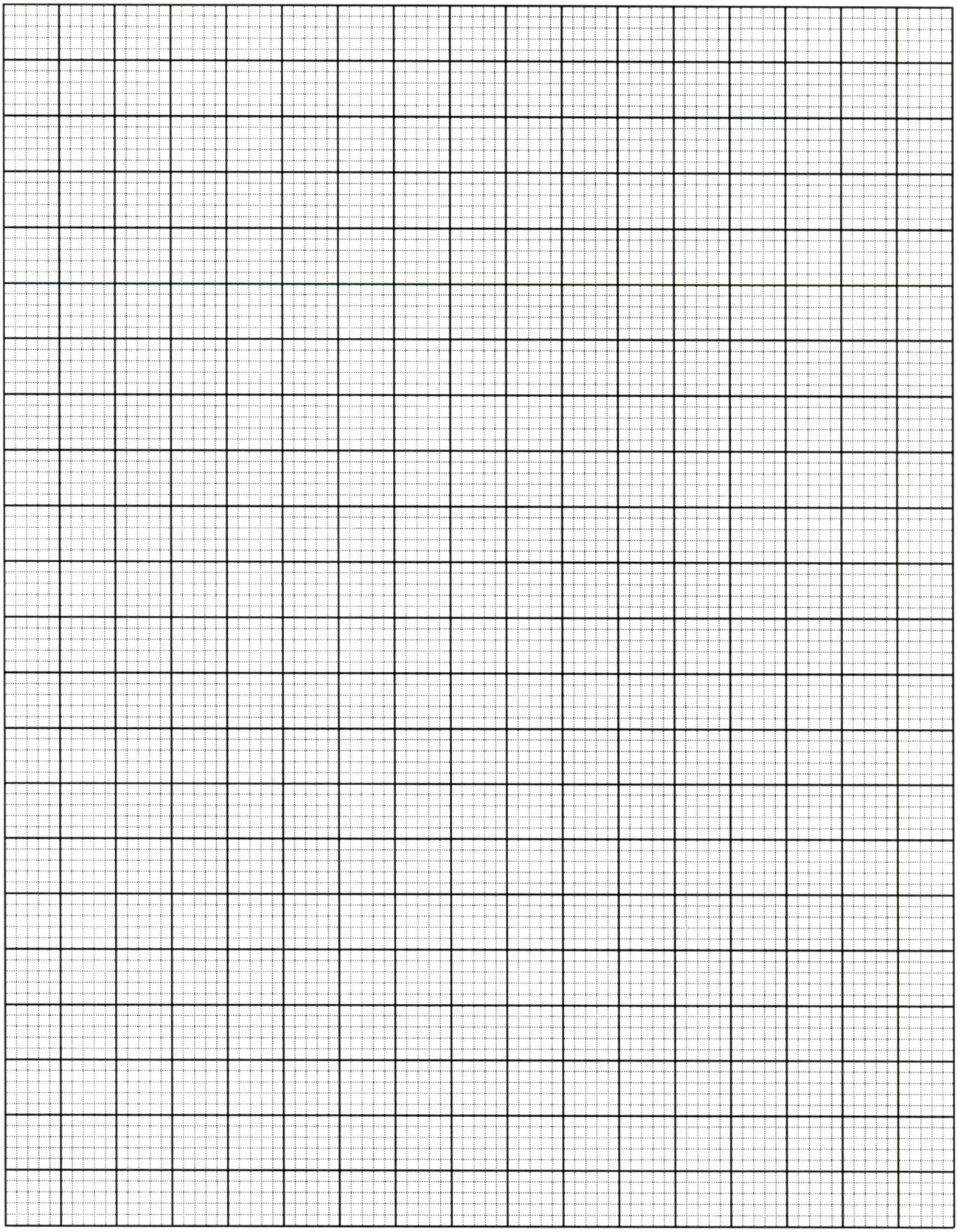
.....

.....

.....

(1 mark)

(d) Using the grid on **page 7**, plot a graph of extension, *e*, against weight, *F*. **(8 marks)**



(e) Use the graph to find the gradient S.

.....

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(6 marks)

(f) Write a suitable conclusion.

.....

.....

(1 mark)

Total 22 marks

NOTHING HAS BEEN OMITTED.

2. Some physics students used the apparatus shown in Figure 2 to carry out a practical assignment.

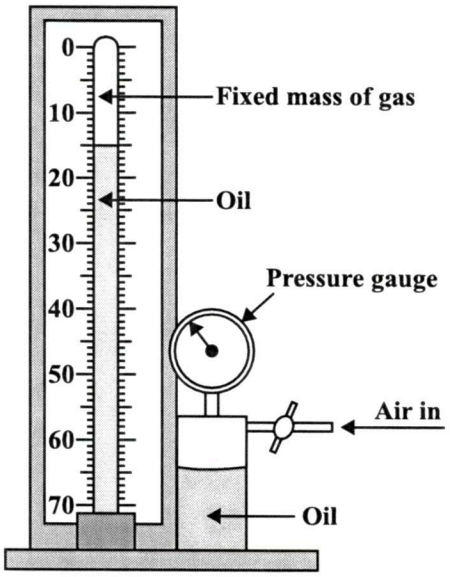

Figure 2

They produced the graph in Figure 3 from their results.

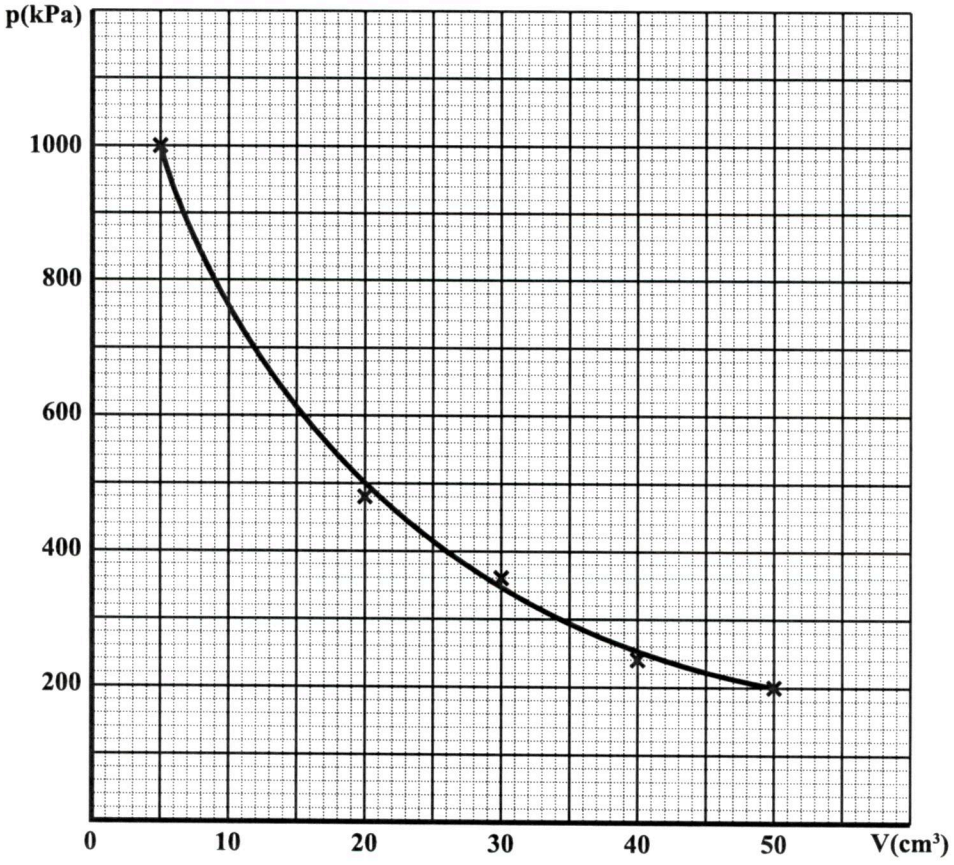

Figure 3

GO ON TO THE NEXT PAGE

(a) (i) State the aim of the experiment.

.....

.....

(2 marks)

(ii) Describe the activity that was carried out by the student.

.....

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(4 marks)

(iii) Use the graph **on page 10** to tabulate the students' results. (Plotted points)

(7 marks)

(iv) State ONE precaution that should be considered when carrying out this experiment.

.....

.....

(1 mark)

(b) Use the aim and the results obtained to write a suitable conclusion.

.....

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(3 marks)

Total 17 marks

3. Plan and design an experiment to demonstrate the diffraction of water waves. Use diagrams to illustrate your expected observations.

Your design MUST include:

(a) Apparatus to be used

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(3 marks)

(b) Procedure

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(3 marks)

(c) Expected observations with diagrams

.....

.....

(3 marks)

Total 9 marks

END OF TEST

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS TEST.

EXTRA SPACE

If you use this extra page, you MUST write the question number clearly in the box provided.

Question No. [ ]

EXTRA SPACE

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Question No. [ ]

EXTRA SPACE

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Question No. [ ]

CANDIDATE'S RECEIPT

INSTRUCTIONS TO CANDIDATE:

1. **Fill in all the information requested clearly in capital letters.**

TEST CODE: | 0 | 1 | 2 | 3 | 8 | 0 | 3 | 2 |

SUBJECT: PHYSICS – Paper 032

PROFICIENCY: GENERAL

REGISTRATION NUMBER: | | | | | | | | | | |

FULL NAME: _____

(BLOCK LETTERS)

Signature: _____

Date: _____

2. **Ensure that this slip is detached by the Supervisor or Invigilator and given to you when you hand in this booklet.**

3. **Keep it in a safe place until you have received your results.**

INSTRUCTION TO SUPERVISOR/INVIGILATOR:

Sign the declaration below, detach this slip and hand it to the candidate as his/her receipt for this booklet collected by you.

I hereby acknowledge receipt of the candidate's booklet for the examination stated above.

Signature: _____
Supervisor/Invigilator

Date: _____

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