REGISTRATION CENTER NUMBER			CENTI	ER NAME
CA	NDIDATE'S	FULL NAME		
CANDIDATE'S IDENTIFICATION	NUMBER	SUBJECT C	ODE	PAPER NUMBER GROUP ONE
FOR OFFICIAL USE ONLY				
(Candidate Random Code)  GENERAL CERT  General Cer		ducation Exam	the party of the state of the state of	
(Candidate Random Code)  GENERAL CERT  General Cer	tificate of Ed	ducation Exam  D LEVEL	ination	

Do not write in pencil except for graphs.

If you have difficulty understanding the requirements of the questions, or other problems, you should ask the supervisor for advice.

Your results must be recorded in the spaces provided in this question book. Details of the theory behind the experiment and the evaluation of experimental errors are not required.

Credit will be given for a written account of the experiment. The account should only consider points extra to those in the questions such as techniques adopted to carry out the required procedure and special precautions taken to ensure accuracy. Calculators and formulae books are allowed. All steps must be shown in your workings.

### Stations:

Candidates are advised to give a description of each test carried out, diagram(s) of the set up, relevant calculations and/or identification of device(s). Methods used should be very clear.

Additional unswer paper and graph paper shall be provided only if it becomes necessary to do so.

At the end of the examination, fasten all your work securely together.

You are reminded of the necessity for good English and orderly presentation in your answers.

The approximate mark distribution is as follows:

06 marks	Calculations	08 marks
20 marks	Stations (4)	40 marks
06 marks	SBA	20 marks
	20 marks	06 marks   Calculations 20 marks   Stations (4) 06 marks   SBA

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	М	AINSTREAM	
1.	You are provided with a number of resistors c voltmeter and the other as a milliameter. The value of mA when in use.		
2.	Measure the terminal p.d. of the battery provide	led and record its value, $V_0 = \dots$	(2 marks)
3.	Connect the battery, the resistor chain and the		
4.	Connect the voltmeter across the battery te terminal of the battery.		ed to the positive
5.	Use the open lead of the milliammeter (rec	l lead) as a switch and make a closed ci	rcuit by connecting
	it to the second junction of the resistor cha and I respectively.	in. Then record the voltmeter and milli	ammeter readings V
		V =	(1 mark)
		I =	(1 mark)
6.	Move the contact to the third and to the resorber values of currents and corresponding	et of the junctions in succession and rep g voltages. Record your values in a tabl	eat step 6 to obtain e
	Table of Data	0). (0)	(20 marks)
		•••••	
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8. Plot a graph of V on the vertical axis against I on the horizontal axis. (6 marks)

(6 marks)

Calculate the slope of your graph and state its significance.

9.

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10. Draw a diagram of your set up.	(2 marks)
	9 (0)
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	8
11.Precautions	(1 mark)
C	
General presentation of work	(I mark)
	(Total 40 marks)

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## STATIONS

You are provided with a wooden bar, a balance and a Vernier caliper, Determine the ratio of volume to mass of wood. Diagram

Method	(2 marks)
Observations	(2 marks)
Calculations	(2 marks)
Precautions	(2 marks)
Conclusion	(2 marks)
	(Total 10 marks)

## Station 2: Thermal Physics

Diagram

You are provided with	two heavers a massuring a	. 11			
150 1 St	two beakers, a measuring c	ylinder, a thermometer,	, about 50 g of a	liquid x at room	temperature
and 50 ml of hot water	at about 70 °C. Determine	the specific heat capac	ity of liquid	Control of Land Control	
	The Artist Land Control of the graph	the specific heat capac	ity of fiquid x.	2017年1月2日 1日 1980年1月	E The Interfered

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Procedure (2 marks)
Observations
(2 marks)
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Precautions (2 marks)
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Conclusion
······································
(2 marks)

(Total 10 marks)

Station 3: Simple harmonic motion	
You are provided with a helical spring, a standard mass, a stop watch a	nd a clamp and stand. Determine the
period of oscillation of the mass spring oscillator in the vertical plane.	
Diagram	(2 marks)
Method	(2 marks)
	A Cas
Observations	(2 marks)
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Calculations	
(2)	
Precautions	(1 mark)
Conclusion	(1 mark)
	(Total 10 marks)

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Station 4: Properties of matte	tation 4: Proper	ties of	matter
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You are provided with a stopwatch, a ball bearing tied to a long thin string, three liquids A, B, and C in 3 tall measuring cylinders. Use this apparatus to classify the liquids in order of increasing viscosity.

STOP	The state of the s
STOR	(Total 10 marks)
	, <del>6</del>
Conclusion	(2 marks)
Precautions	(2 marks)
and the state of t	
Observation	(2 marks)
Method	(2 marks)
Diagram	(2 marks)

GO BACK AND CHECK YOUR WORK

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REGISTRATION CENTER N	IUMBER	CEN	TER NAME
C	CANDIDATE'S I	FULL NAME	
CANDIDATE'S IDENTIFICATION	ON NUMBER	SUBJECT CODE	E PAPER NUMBER 3 Group Two
FOR OFFICIAL USE ONLY (Candidate Random Code)			
(Candidate Random Code)  GENERAL CER		lucation Examination	
GENERAL CER	ertificate of Ed	lucation Examination LEVEL	ON BOARD

### **Duration: Two and a Half Hours**

Enter the information required in the boxes above.

Do not write in pencil except for graphs.

If you have difficulty understanding the requirements of the questions, or other problems, you should ask the supervisor for advice.

Your results must be recorded in the spaces provided in this question book. Details of the theory behind the experiment and the evaluation of experimental errors are not required.

Credit will be given for a written account of the experiment. The account should only consider points extra to those in the questions such as techniques adopted to carry out the required procedure and special precautions taken to ensure accuracy. Calculators and formulae books are allowed. All steps must be shown in your workings.

#### Stations:

Candidates are advised to give a description of each test carried out, diagram(s) of the set up, relevant calculations and/or identification of device(s). Methods used should be very clear.

Additional answer paper and graph paper shall be provided only if it becomes necessary to do so.

At the end of the examination, fasten all your work securely together.

You are reminded of the necessity for good English and orderly presentation in your answers.

The approximate mark distribution is as follows:

Diagram, precautions and presentation	06 marks	Calculations	08 marks
Observations	20 marks	Stations (4)	40 marks
Graphs	06 marks	SBA	20 marks
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## **GROUP 2**

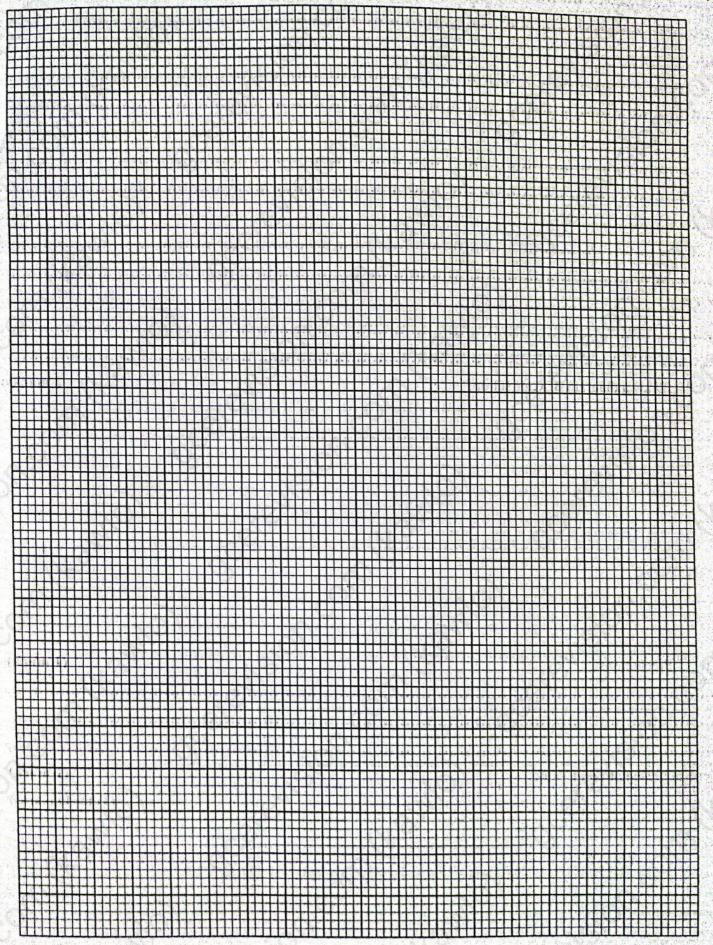
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You are provided with a number of resistors connected in a chain and another resistor X. One of the multir shall be used as a voltmeter and the other as a million star. The

miliameter to 200 mV range when in use.	shall be set to the 20 V range and
Measure the terminal p.d. of the battery provided and record its value,	
Connect the battery, the resistor chain, the resistor X and the milliammeter Connect the voltmeter across X.  Use the open lead of the milliammeter (red lead) as a switch and milliammeter (red lead) as a switch and milliammeter (red lead).	
it to the second junction of the resistor chain. Then record the voltn and I respectively.	neter and milliammeter readings V
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I =	(1mark)
Move the contact to the third and to the rest of the junctions in succ	ession and repeat step 6 to obtain
other values of currents and corresponding voltages. Record your v	values in a table
Table of Data	(20 marks)
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이 마음보다는 가장으로 가장하게 하게 되었다. 그리고 있는 그리고 하는 것이 되었다면 하는 것이 되었다면 하는 것이 되었다면 하는데	

8. Plot a graph of V on the vertical axis against I on the horizontal axis.

(6 marks)



9.	Use your graph to determine the resistance of X.	(6 marks)
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10	P	
10.	Draw a diagram of your set up.	2 marks)
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		(Control of the Control of the Contr
11.	Precautions	
		(1 mark)
	.00	
·····		
Gen	eral presentation of work	(1 mark)
		(Total 40 marks)

## STATIONS

# Station I: Determination of density

You are provided with a wooden bar, a balance and a Vernier caliper. Determine the density of wood in the bar. Diagram

Method	(2 marks)
Observations	(2 marks)
Calculations	(2 marks)
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Precautions	(2 marks)
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Conclusion	(2 marks)
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	(Total 10 marks)
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A CALL OF THE PARTY	2: Thermal	Dhyeire
Station	7: I ucima	THASICS

Station 2: Thermal Physics	ger in a traduction and the agree of
You are provided with a beaker, water at about 70 °C, a piece of solid, ti	issue paper, a measuring cylinder a balance and
thermometer. Determine the specific heat capacity of the solid.	
Diagram	(2 marks)
Procedure	(2 marks)
	••••••••
Observations	(2 marks)
	w. stail: 11 m
Precautions	(2 marks)
Caren D. Car	
Conclusion	
	(2 marks)
	(Total 10 marks)

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gastion.	3:	Sim	ple	harm	onic	motion	
CAATHIII	J.		and the second				

0000/0780/3/G2

You are provided with a helical spring, a sta	indard mass, a stopwatch and a clamp and stand. Determine the
frequency of oscillation of the mass spring of	
Diagram	(2 mark

Method	(2 marks)
Observations	(2 marks)
	O
Calculations	(2 marks)
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Q=Q	
Precautions	(1 mark)
Conclusion	(1 mark)
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·····	
	(Total 10 marks)
	Turn Over

Station	4:	Pro	perti	es of	matter

You are provided with a stopwatch, a ball bearing tied to a long thin string, the measuring cylinders. Use this apparatus to classify the liquids in order of decreases.	ree liquids A, B, and C in 3 tall reasing viscosity.
Diagram · ·	(2 marks)
ration in 1000	
Method	(2 marks)
	그리고 있는데 가는 다른 그녀야 있는데 하는 그리고 하면 하면 없다면서 가장 그리고 있는데 그리고 있다면 하다면 하다면 하다.
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Precautions	(2 marks)
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Conclusion	(2 marks)
	(Total 10 marks)
STOP	

GO BACK AND CHECK YOUR WORK