

Grade
6

امتحان نهاية الفصل الدراسي الثاني – 2022/2023 الجزء الورقي

End of Term 2 Exam 2022/2023- Paper Part

	اسم الطالب / Student Name
	المدرسة / School
6	الصف / Class
Elite	المسار / Stream
Science	المادة / Subject
Inspire	

This table must be filled in, with complete accuracy by the estimation committee

يملأ هذا الجدول بدقة تامة من قبل لجنة التقدير

المراجع Reviser	المقدر 2 Marker 2	المقدر 1 Marker 1	الدرجة Mark		رقم السؤال Question No.
			كتابة In words	رقميا In numbers	
					Q.(1)
					Q.(2)
			20		مجموع P1 * يرصد في المنهل P1 Total is to be recorded on Al Manahal
					Q.(3)
			10		مجموع P2 * يرصد في المنهل Part 2 Total is to be recorded on Al Manhal

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- على إدارت المدارس ولجان الامتحانات ومراكز التقدير مراعاة ذلك و رصد أي مخالفات والعمل على اتخاذ الإجراءات اللازمة.

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- School Administrations, Exam Committees and Marking Centers shall take this into account, monitor violations and take necessary measures.





Part C

Question	1	Question
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Water was heated in a copper cooking bowl on the stove for 10 minutes. As the temperature of the water increased, bubbles started forming. Then the same thing was repeated in a bowl made of aluminum and a bowl made of glass. The water in the aluminum cooking bowl took 30 minutes to boil while in the glass bowl, it took only 20 minutes.



The following table represents the specific heat of the material of the different bowls:

Material	Specific Heat (J/(kg·°C))
Aluminum	879
Copper	320
Glass	650

A. What can you conclude about the relationship between the specific heat of the material of the bowl and the time it takes for water to boil?

[1 Point]

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B. How does the amount of energy transferred to the cooking bowl affect the rate of heating of water? [1 Point]

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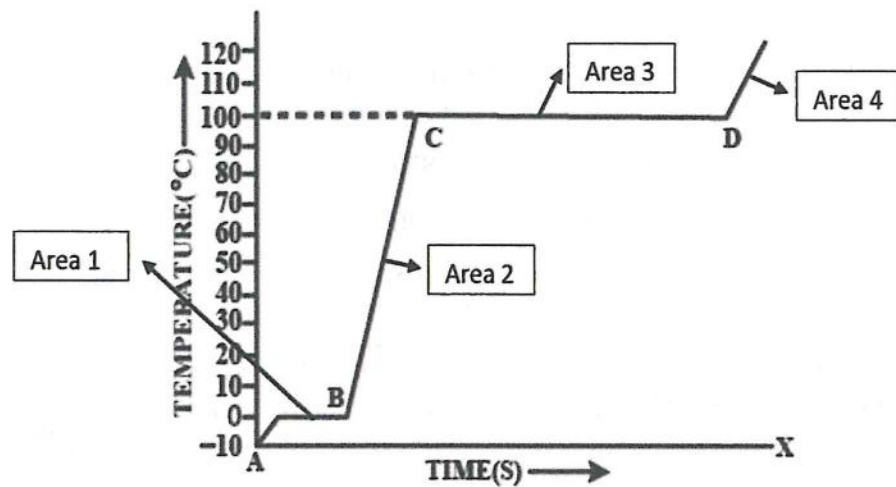
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C. The following chart represents the heating curve of the water in the copper bowl.



Use the chart to answer the following questions:

i. Which area(s) show a change in the potential energy of water particles? [2 Points]

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d) Heat from passenger's bodies:

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III. Draw an arrow on the following shapes to represent the direction of heat flow:

Your arrow may point to the right → or to the left ←

[3 points]

Train brakes: 100 °C

Train tracks: 40 °C

Train engine: 200 °C

Air in the tunnels: 30 °C

Inside the train: 22 °C

The passenger's bodies: 37 °C

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End of Bonus Questions

أنتهت الأسئلة الإضافية



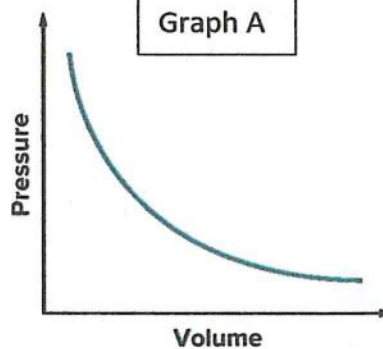
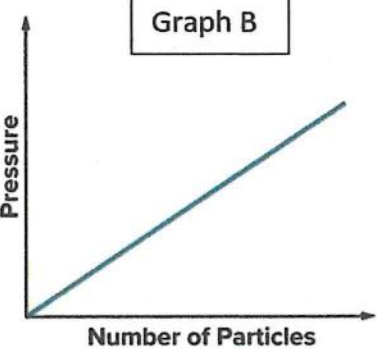
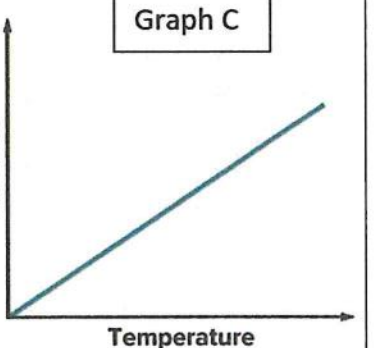
***** BONUS *****												
Question	3	Question										
<p>Most underground train systems have a problem of high temperatures within sections of their tunnels. For example, the London underground train has several sections of rail lines where the tunnel temperature can be above 40 °C. The problem has become worse over the past 100 years as soil around the tunnels have gradually warmed.</p>												
<p>I. Which of these heat sources could have contributed to the warming of soil around the tunnels underground? [3 points]</p>												
<p>Circle the correct answer:</p> <table border="1"> <thead> <tr> <th>Heat Source</th> <th>Answer</th> </tr> </thead> <tbody> <tr> <td>Heat from the sun</td> <td>YES / NO</td> </tr> <tr> <td>Heat released from the train's brakes</td> <td>YES / NO</td> </tr> <tr> <td>Heat from the train engines</td> <td>YES / NO</td> </tr> <tr> <td>Heat from passenger's bodies</td> <td>YES / NO</td> </tr> </tbody> </table>			Heat Source	Answer	Heat from the sun	YES / NO	Heat released from the train's brakes	YES / NO	Heat from the train engines	YES / NO	Heat from passenger's bodies	YES / NO
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Heat from the sun	YES / NO											
Heat released from the train's brakes	YES / NO											
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Heat from passenger's bodies	YES / NO											
<p>II. Explain how each heat source listed below contributes to the warming of the soil in the tunnels of the London Underground. [4 points]</p>												
<p>a) Heat from the sun:</p> <p>.....</p> <p>.....</p> <p>.....</p>												
<p>b) Heat released from the train's brakes:</p> <p>.....</p> <p>.....</p> <p>.....</p>												
<p>c) Heat from the train engines:</p> <p>.....</p> <p>.....</p> <p>.....</p>												



<p>ii. Which area(s) show a change in the kinetic energy of water particles? [2 Points]</p> <p>.....</p> <p>.....</p> <p>.....</p>	<p>iii. How do the particles of water behave when water is heated from 0 °C to 105 °C? [2 Points]</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
<p>iv. What is the difference between kinetic energy and potential energy? [2 Points]</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	





Question	2	Question
<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Graph A</div>  <p style="font-size: small;">Pressure</p> <p style="font-size: small;">Volume</p> </div> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Graph B</div>  <p style="font-size: small;">Pressure</p> <p style="font-size: small;">Number of Particles</p> </div> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Graph C</div>  <p style="font-size: small;">Pressure</p> <p style="font-size: small;">Temperature</p> </div> </div> <p style="margin-top: 10px;">Complete the sentences below to indicate how each variable changes. By writing increases, decreases, or does not change. [2 Points Each]</p> <div style="margin-top: 10px;"> <p>1- When pressure increases, the temperature _____</p> <p style="margin-left: 40px;">Which graph shows this? _____</p> <p>2- When the number of particles increases, the pressure _____</p> <p style="margin-left: 40px;">Which graph shows this? _____</p> <p>3- When pressure increases, volume _____</p> <p style="margin-left: 40px;">Which graph shows this? _____</p> <p>4- When pressure increases, the mass _____</p> <p>5- When average kinetic energy increases, the pressure _____</p> </div>		

