| AEPHY2024  **Narrogin SHS Year 11 ATAR PHYSICS Name:** |
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| Task No: | 2 |
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| Task Type: | Test |
| Content: | Heating processes |
| Task Description: | Complete the attached questions in the spaces provided.  Marks will be awarded for presentation and working.  **Test conditions (50 minutes).**  *Formulae and data booklet provided.*  *Non-programmable calculator permitted.* |
| Total Marks: | 35 |
| Weighting: | 6% |
| Materials required | pens, pencils (including coloured), sharpener, correction fluid, eraser, ruler, highlighters, scientific calculator |
| Due Date: |  |

1. Explain the difference between temperature and heat.

(4 marks)

1. Draw a cooling curve for water. You will need to assume some values. (4 marks)
2. Explain why metals are better conductors of heat than non-metal solids. (3 marks)
3. Explain what causes sea breezes. A suitable diagram may be needed to help with your explanation. (6 marks)
4. How much energy is absorbed when 350g of water is heated from 25oC to 45oC?

(3 marks)

1. A 2.54kg sample of water at 30oC is heated with 350J of energy. Calculate the final temperature of the water. (3 marks)
2. A microwave oven can warm 60g of water from 5oC to 40oC in 50 seconds. Calculate the theoretical power rating of the microwave.

(3 marks)

1. 2 kg block of ice at -20oC is heated until it melts and then the water it produces continues to be heated until it reached 20oC. Determine the total amount of energy required. (4 marks)

1. A 30kg block of iron (cFe = 900 JKg-1K-1) had an initial temperature of 80oC. It was slowly lowered in to a drum of water. The water had a mass of 60kg and an initial temperature of 15oC. Calculate the final temperature of the combined iron/water mixture. Assume no loss of heat to the surrounding environment. (5 marks)

End of test