NAME: ..... STREAM: .....

END OF TERM II EXAMINATIONS
S.1 PHYSICS
1 Hour 45 Minutes

INSTRUCTIONS

- Answer all the questions in this paper.
- Use only the spaces provided to answer the questions.
- Where necessary, assume $g = 10ms^{-2}$

1. (a) A piece of metal of weight $3.0N$ has an irregular shape. Calculate its mass.

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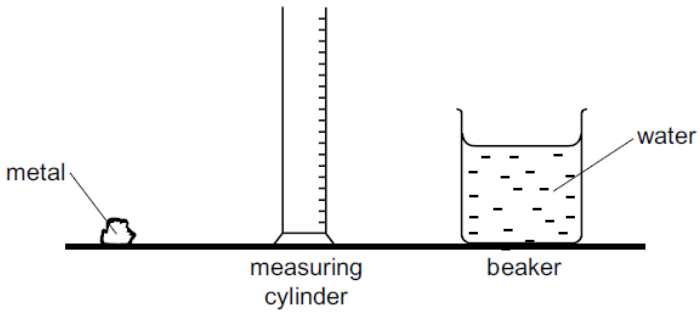
(02 marks)

(b) The figure below shows the piece of metal, a measuring cylinder and a beaker containing water.



(i) Describe how you can determine the volume using the set up in the figure above.

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(04 marks)

(ii) Explain why the procedure in **b(i)** above is not suitable for finding the volume of a piece of low-density wood whose shape and size is similar to that of the wood.

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(01 mark)

(iii) The mass of another piece of metal of volume $150cm^3$ is $405g$. Find its density.

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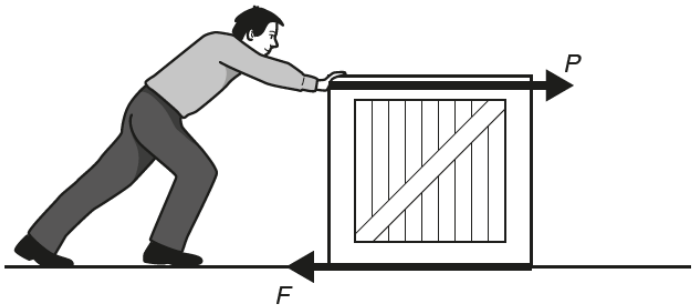
(03 marks)

2. A man pushes a box of mass $25kg$ with a force P. Another force F opposes the motion of the box as shown below.



(a) (i) What scientific name is given to force F?

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(01 mark)

(ii) State one way of increasing force F.

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(01 marks)

(iii) Identify two instances where force F is necessary.

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(02 marks)

(b) When the two forces are balanced, the box remains stationary.

(i) Explain why the box remains stationary.

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(01 mark)

(ii) A part from being stationary, describe one other possible state of motion of the box when the forces are balanced.

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(01 mark)

(iii) How can the box be made to move?

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(01 mark)

(c) When $P = 100N$ and $F = 85N$, the box accelerates. Calculate the acceleration of the box.

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(03 marks)

3. (a) Mukasa, a student in S.1, found a substance unknown to him. The substance has a definite volume but not shape.

(i) In which state of matter is the substance?

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(01 mark)

(ii) Describe the arrangement of the particles in the substance and draw a diagram to illustrate your description.

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(02 marks)

(iii) The substance was heated strongly. State the change in state of matter that is likely to occur to the substance.

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(01 mark)

(b) In one of its physical states, matter appears as ionised gas. Identify this state of matter and give an example of a substance in this state of matter.

State:

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(01 mark)

Example:

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(01 mark)

(c) (i) In the space provided below, draw a simple diagram used to demonstrate Brownian motion.

(02 marks)

(ii) Agnes viewed smoke particles through your set up. State and explain what she observed.

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(02 marks)

4. Two students, Mukasa and Mubiru wanted to determine the length of their class room block. Mukasa used his strides and obtained the length as $80m$. Mubiru used a tape measure and obtained the length as $850cm$.

(a) What do you understand by the term length?

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(01 mark)

(b) State the scientific name given to

(i) Makasa's method of finding the length.

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(01 mark)

(ii) Mubiru's value of the length.

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(01 mark)

(c) State the observable error in Mubiru's value of the length.

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(01 mark)

(d) State two:

(i) likely sources of errors in Mubiru's method of finding the length.

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(02 marks)

(ii) precautions Mubiru should take in order to obtain accurate results.

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(02 marks)

(e) State two people who use a tape measure while serving their customers.

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(02 mark)

***** END *****