

S.1 Physics Test

Time: 1Hour 10 minutes

Attempt all questions

1. The Physics teacher once said, ***“The density of water is 1000kg/m^3 and that of mercury is 13600kg/m^3 ”.***

(a) Explain the meaning of the teachers’ statement (2 marks)

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(b) The teacher also said, ***“When the two liquids are mixed together, water floats on top of mercury”***. Explain the teachers’ statement (2 marks)

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2. ***“Water is not used as a thermometric liquid unlike mercury”***. Suggest any four reasons to justify this statement (4 marks)

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3. A student placed his pen in the pocket. A few hours later, he noticed that the ink was overflowing and dirtening his trouser. Explain how this occurred. (4 marks)

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4. Due to inadequate and untimely supply medical equipment and other facilities by the government, a local healthy centre has decided to construct an instrument that can be used to monitor the temperature of patients using locally available materials. They are therefore looking for an expert to guide them on how to come up with the instrument.

(a) Briefly describe the steps they will follow to make the instrument (8 marks)

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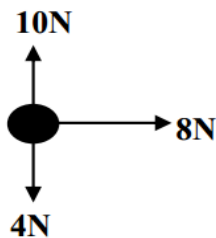
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(b) Explain how the instrument will be used to monitor the temperature of patients

(4 marks)

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5. The lengths of the mercury column of a thermometer at ice point and steam point are 1cm and 6cm respectively. Calculate the temperature that will correspond to a length of 4cm.

(6 marks)

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6. The figure below shows forces of 10N, 8N and 4N acting on a particle in the directions indicated by arrows.



By means of scale drawing, determine the resultant force.

(10 marks)

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END