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Nairobi

## END OF YEAR EXAMS 2015

**Form 1 physics**

1. What is the time shown by the clock in the figure below.(1 mrk)

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1. Classify the following quantities as either basic physical quantities or derived physical quantities.(2 mrks)

|  |  |
| --- | --- |
| QUANTITY | Type. |
| Mass |  |
| Time |  |
| Area |  |
| Density |  |

1. What do you understand by the term atmospheric pressure?(1mrk)

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1. Avedi found that the perimeter of his farming plot was approximately 239 strides. His stride was 0.8m long. What is the perimeter of his farm in meters?(2 mrks)

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1. (a).Define the term volume.(1mrk)

…………………………………………………………………………………………………………

 (b).Express the following volumes in M3

1. 50000cm3(1 mrk)
2. 50litres(2 mrks)
3. A sphere of diameter 6.0cm is moulded into a thin uniform wire of diameter 0.2mm.Calculate the length of the wire in meters.(take л=22/7).(3 mrks)

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1. The internal measurements of a rectangular tank were recorded as 12.5m long, 10.0m wide and 5.6m high. Determine the mass of water in the tank when full.(density of water=1000Kg/M3)(2 mrks)

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1. Bronze is made by mixing molten copper and tin.If 100Kg of the mixture contains 80%by mass of copper and 20% by mass of tin, calculate the density of bronze.(5 mrks.)

Take: *density of copper=8900Kg/m3*

*Density of tin=7000Kg/m3*

1. A solid weighs 200N in air and 185N when completely immersed in water. Calculate the upthrust force acting on the solid.(2 mrks)

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1. Name the force that is applied when performing each of the following tasks.(4 mrks)

|  |  |
| --- | --- |
| Work to be done | Type of force. |
| Separate a mixture of iron fillings and sand. |  |
| Rising and falling ocean tides. |  |
| Separation of ghee from milk. |  |
| Water rising in a narrow tube. |  |

1. Define the term pressure and state it`s S.I unit.(2 mrks)
2. A seabed diver is 35m below the surface of seawater. If the density of seawater is 1.03g/cm3, determine the total pressure acting on the diver. (take atmospheric pressure as 100000N/m2)(3 mrks).

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1. The air pressure at the base of a mountain 760mmHg while the air pressure at the top is 423mmHg.Calculate the height of the mountain.(4 mrks).

*Take: density of mercury =13600Kg/m3* and *Density of air=1.25Kg/M3*

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1. The figure below shows an instrument that can be used to measure the pressure of a gas supply.

.(a).Name the instrument.(1 mrk).

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 (b).Calculate the pressure of the gas.(Take atmospheric pressure as 103000N/m2 )(3 mrks)

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1. The figure below shows a simplified hydraulic brake system of a car.

(a).Name the parts labeled: (4 mrks)

A………………………………………………………………………………..

B…………………………………………………………………………………..

C………………………………………………………………………………….

D…………………………………………………………………………………..

(b).What is the function of the part labeled E.(1 mrk)

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(c).State two properties of liquid B.(2 mrks)

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1. A hydraulic press below consists of a plunger of diameter 0.052m and a larger piston of diameter of 0.32m.A force of 500N is exerted on the plunger. Determine the upward force in the large piston.(4 mrks)
2. A building standing 100m from a pinhole camera produces on the screen of the camera an image 5 cm high 10 cm behind the pinhole. Determine the actual height of the building.

( 3 marks)

1. The figure below shows an object O placed in front of a plane mirror

On the same diagram, draw rays to locate the position of the image 1 as seen from the eye E. (3 mks)

1. Name two types of forces which can act between objects without contact. (2 mks)
2. Explain why the pressure of a gas increases when the mass of the gas in the container is increased. (2 mks)

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