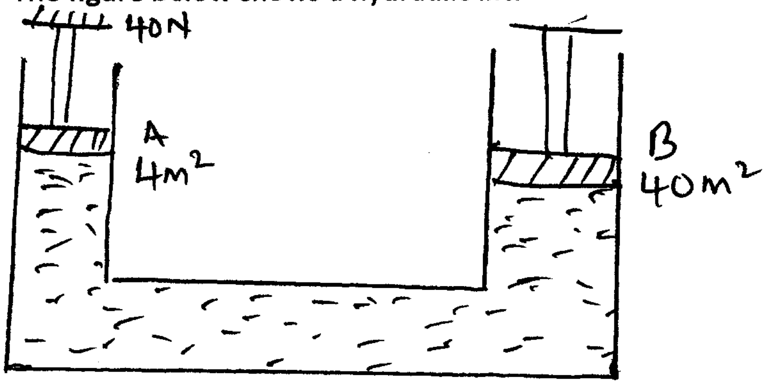
GATITU SECONDARY SCHOOL, P.O. BOX 327 – 01030, GATUNDU.

FORM 3 PHYSICS MID TERM EXAMINATION. TERM 1 2016

NAME:____ADM:__________CLASS:____

1. The figure below shows a hydraulic lift.

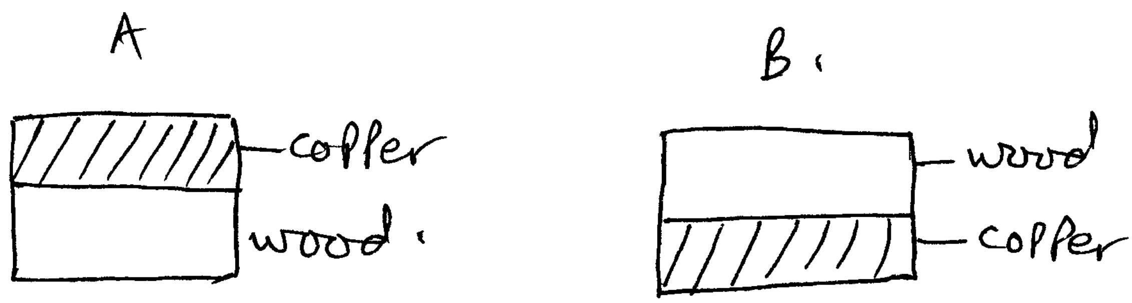


a) Calculate the pressure exerted at A (2mks

b) What pressure is transmitted to point B. Explain (2mks

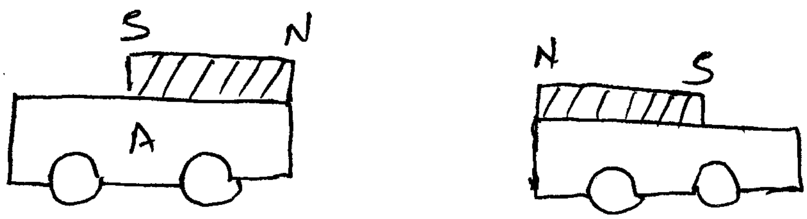
c) Calculate the force transmitted to B (2mks

2. State with a reason which object is more stable than the other in the figure below. (2mks



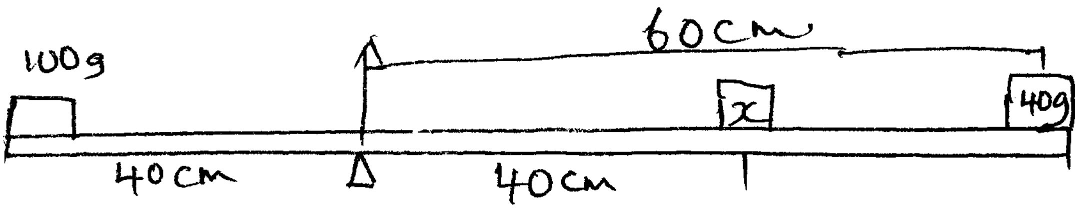
3. The figure below shows two bodies X and Y. Which body moves more easily in water. Give a reason for your answer. (3mks

4. Magnets are attached in a trolley A and B as shown in the figure below.



Explain what happens when you push trolley A towards B. (2mks

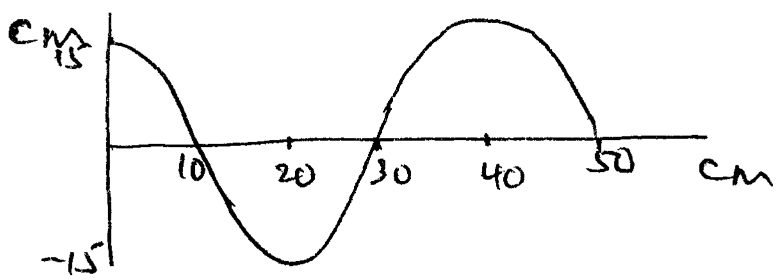
5. A uniform rod is pivoted at the point shown



Determine the value of X by applying the principle of moments. (4mks

6. Which property of a magnet is used in making navigational compass? (2mks

7. The figure below shows a string wave.



If the speed of the wave is 25m/s determine the a) Amplitude (4mks

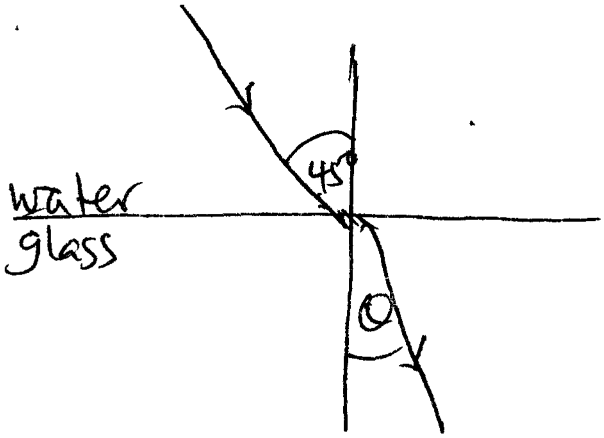
b) Wavelength

c) Frequency

d) Period of the oscillation

8. State two conditions necessary for total internal reflection. to (4mks
occur

9. The refractive index of water and glass is $^4/_3$ and $^3/_2$ respectively. Use the diagram below to answer the questions that follow.



a) Find (i) ${}_w n_g$ (3mks

ii) ${}_g n_w$ (2mks

iii) Value of θ (2mks

10. Find the refractive index of water whose critical angle is 49°. (3mks

11. Prisms are preferred to mirrors in periscopes. State 3 reasons for that. (3mks

12(a) State Newton's second law of motion (2mks

b) A car of mass 1000kg travelling at 36kph is brought to rest over a distance of 20m. Find(3mks

i) Average retardation

ii) the average breaking force. (2mks

13. A radio station broadcasts at a frequency of 96.4 MHZ. Find its wavelength. Take speed of light = 3.0 x 108 m/s. (3mks

14. Give two differences between ULTRA VIOLET and infrared (2mks

ii)

15. A boy stands 495m from a hill. He claps his hands and measured the time interval for 10 consecutive claps and discovers that it took 30 seconds. Estimate the speed of sound. (3mks

16. Sketch a distance – time graph for (i) An object moving at a constant speed. (2mks

slowing

ii) An object down uniformly and then stops. (2mks

17. A trolley of mass 20kg is placed on a horizontal surface and pulled by a horizontal force of 40N.

a) What will be its acceleration if it is moving freely. (2mks

b) What will be its acceleration if a frictional force of 15N is acting on it. (2mks

18. A 1kg mass and another of 10kg are released simultaneously from the top of a tall tree. Which mass will have greater downward acceleration? (2mks

b) Explain your answer in (a) (2mks