**GATITU MIXED SECONDARY SCHOOL**

**FORM 3 PHYSICS**

**PAPER 1**

**TIME: 1 HR 30MIN**  70MKS

1. The figure below shows a measuring cylinder containing some water.



Determine the readings on the measuring cyclinder, after three drops of volume 0.6 cm3 are added 2mks

1. List two factors affecting surface tension. 2mks
2. Give the difference between a scalar and vector quantity, and give examples for each. 2mks
3. State the principle of moments. 1mk
4. Give the difference between unstable and neutral equilibrium. 2mks
5. A uniform metre rule is pivoted at its centre. A force of 65N is applied at a point which is 15 cm from one end of the rule. What is the moment of the force? 3mks
6. Explain why a matatu is more likely to topple over when the roof rack is heavily loaded than when the roof rack is empty. 2mks
7. State Hooke’s law. 1mk
8. Define the following
9. Wave 1mk
10. Pulse 1mk
11. Amplitude 1mk
12. Frequency 1mk
13. Period 1mk
14. Define an echo 1mk
15. State two practical application of echo sounding under water. 2mks
16. State three factors that determine the pitch of sound from a stringed instrument. 3mks
17. A young boy claps his hands once at a distance of 500m from a vertical cliff. If the temperature of the surrounding is 10 c , how long does it take for him to hear the echo? 3mks
18. Determine the following terms
19. Streamline flow 1mk
20. Turbulent flow 1mk
21. Dynamic lift 1mk
22. List three assumptions necessary to derive the Bernoulli equation. 3mks
23. State three applications of Bernoulli’s effect 3mks
24. State the equation of continuity as applied in fluid flow. 3mks
25. A water pipe of cross sectional area 4 cm2 and with water flowing in it at 10ms-1 is connected to another pipe of cross –sectional area 1 cm2. Determine the velocity of water in the 1cm3 pipe. 3mks
26. In a vacuum flask the walls enclosing the vacuum are silvered on the inside. State the reason for this. 1mk
27. Explain how flask minimizes loss of heat through radiation. 1mk
28. Why is it that boiling is not used for sterilization of clinical thermometer? 1mk
29. State one application of expansion in gases. 1mk
30. Define linear expansivity. 1mk
31. When a liquid is heated in glass flask, its level at first falls then rises. Explain this observation. 2mks
32. List three effects of anomalous expansion. 3mks
33. 1600 cm3 of fresh water of density 1 g/cm3 are mixed with 1400 cm3 of sea water of density 1.25 g/cm3. Determine the density of the mixture. 3mks
34. The density of liquid X is 13.6 gcm-3. Calculate the mass of 19.4cm3 of the liquid. 2mks
35. State why the weight of an object on the surface of the earth varies from one place to another. 1mk