**GATITU MIXED SECONDARY SCHOOL**

**PHYSICS FORM TWO CAT 1 TERM 3 2014**

**TIME: 1 HR**

1. State Hooke’s law 1mk
2. Define the following terms ;
3. Pitch 1mk
4. Echo 1mk
5. State the principle of moments 1mk
6. Differentiate between a streamline flow and turbulent flow. 2mks
7. List the factors affecting the speed of sound in air and their effects. 4mks
8. The diagram below shows a uniform bar 1m long in equilibrium under the action of the forces shown.



Determine the,

1. Total clockwise moments. 2mks
2. Total anti clockwise moments 1mk
3. Weight , N, of the bar 2mks
4. The wavelength of a local fm radio station is rated 120 MHZ. Determine its wavelength if the speed of light is given as 3 × 108 ms-1 3mks
5. A pipe of uniform cross – sectional area of 1.0 × 10 -4 m2 and length 5.0 × 10-1 m lets in water from one end to the other in 5 seconds. Calculate the rate of flow of the water. 3mks
6. A girl standing some distance away from a cliff blows a whistle and hears the echo 1.10 s later. If the speed of sound in air is 350ms-1, determine how far the girl is from the foot of the cliff. 3mks
7. Two springs of negligible weights and of constants K1 = 50Nm -1 and K2=100Nm-1 respectively are connected end to end and suspended from a fixed point. Determine ;
8. The total extension when a mass of 2.0 kg is hung from the lower end. 3mks
9. The constant of the combination. 2mks
10. List five factors that affect the spring constant of a spring 5mks
11. Give the difference between stable and unstable equilibrium. 2mks
12. When a strong wind blows over a gently sloping iron roof of a building , the roof is likely to be blown of . Explain this observation. 2mks
13. State the Bernoulli’s principle 2mks
14. Water ripples are produced by a straight vibrator such that the distance between successive crests is 6 cm and the waves travel 72 cm in 2.45s. calculate in SI units;
15. The wavelength of the waves 2mks
16. The velocity of the waves 2mks
17. The frequency of the vibrator 2mks
18. Name two hazards of Bernoulli’s effect. 2mks
19. List two assumptions necessary to derive the Bernoulli equation. 2mks