***GATITU MIXED SECONDARY SCHOOL***

***PHYSICS FORM 3 END OF TERM 3 2015 EXAM***

1. State the three assumptions made in the equation of continuity 3mks
2. Give three factors affecting velocity of sound in air. 3mks
3. Define the following terms;
4. Progressive waves 1mk
5. Pulse 1mk
6. List the four factors that affect the spring constant of a spring. 4mks
7. Differentiate between uniform velocity and instantaneous velocity. 2mks
8. State the two laws of refraction. 2mks
9. State Newton’s third law. 1mk
10. Give the difference between renewable and non renewable energy resources. 2mks
11. Give two examples of non renewable energy sources. 1mk
12. State Ohm’s law 1mk
13. A current of 2MA flows through a conductor of resistance 2 kvl. Calculate the voltage across the conductor. 2mks
14. Define a stationary wave. 1mk
15. State the following laws
16. Boyle’s law 1mk
17. Charles’ law 1mk
18. Pressure law 1mk
19. State and explain three factors determining heat produced by electric current 3mks
20. It is noted that 250 cm3 of fluid flows out of a tube, whose inner diameter is 7mm, in a time of 4/5. What is the average velocity of the fluid in the tube? 4mks
21. A dics siren with 100 holes is rotated at constant speed making 0.20 revolutions per second. If air is blown towards the holes, calculate;
22. The frequency of the sound produced. 3mks
23. The wavelength of the sound produced, if velocity of sound in air is 340 m/s. 2mks
24. Waves on a spring are produced at the rate of 20 wavelengths every 5s
25. Find the frequency of the wave motion. 2mks
26. If the wavelength of the waves is 0.01 m, find the speed of the waves. 2mks
27. Find the period of the waves. 2mks
28. A metal cube suspended freely from the end of a spring causes it to stretch by 5.0 cm. a 500 g mass suspended from the same spring stretches it by 2.0 cm. if the elastic limit is not exceeded;
29. Find the weight of the metal cube? 3mks
30. By what length will the spring stretch if a mass of 15 kg is attached to its end? 2mks
31. A tape is pulled through a ticker timer which makes one dot every second. If it makes three dots and the distance between the first and the third dot is 16 cm, find the velocity of the tape 3mks
32. A body moving with uniform acceleration of 10ms-2 covers a distance of 320 m. if its initial velocity was 60 ms-1, calculates its final velocity. 3mks
33. Three resistors, 2vl, 6vl and 8 vl are connected in series to a power source. A current of 2A flows through the circuit. Calculate;
34. The voltage drop across each resistor. 2mks
35. The voltage across the source. 2mks
36. The total resistance in the circuit. 2mks
37. A man uses the inclined plane to lift a 50 kg load through a vertical height of 4.0 m. the inclined plane makes an angle of 30 with the horizontal. If the efficiency of the inclined plane is 72%, calculate
38. The effort needed to move the load up the inclined plane at a constant velocity. 3mks
39. The work done against friction in raising the load through the height of 4.0 m (take g =10Nkg-1) 3mks