**GATITU MIXED SECONDARY SCHOOL**

**PHYSICS FORM 3 CAT 2 TERM 3 2014**

1. State the following rules;
2. Ampere’s swimming rule. 2mks
3. Fleming’s left hand rule. 2mks
4. Define the following and state the SI units.
5. Work 1mk
6. Heat capacity 1mk
7. Specific heat capacity. 1mk
8. Convert the following values of temperature.
9. To Kelvin 2mks
10. – 40 c
11. 53 c
12. To degrees Celsius 2mks
13. 45 k
14. 300k
15. State the following laws
16. Pressure law. 1mk
17. Boyle’s law. 1mk
18. State two factors that can be varied to increase the strength of an electro magnet. 2mks
19. Give the difference between latent heat of fusion and latent heat of vaporization. 2mks
20. State two uses of force on a conductor carrying current in a magnetic field. 2mks
21. State the law of conservation of energy. 1mk
22. What is the main disadvantage of using an electromagnet? 1mk
23. A person whose mass is 70kg is running at a speed of 10ms-1 . What is the kinetic energy of the person? 3mks
24. A block of copper of mass 10.0 kg and specific heat 390 Jkg-1 K-1 is heated from 300k to 500k. Calculate the heat absorbed by the block. 3mks
25. Determine the minimum power needed by a girl of mass 50kg to run up a flight of 12 steps in 10 seconds given that each step is 30 cm high. 3mks
26. Calculate the heat required to convert 5 kg of ice at – 20 c to liquid at 0 c.( specific heat capacity of ice = 2100Jkg -1 k-1 specific latent heat of fusion of ice =340000Jkg-1k-1) 4mks

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1. A mountaineer carries 3000cm3 of oxygenate a pressure of 1.0 × 106 pa and a temperature of 20 c in a cylinder.  What is the pressure of the gas in the cylinder at the top of the mountain when the temperature is -17 c(assume the volume of the cylinder does not change) 3mks
2. A pulley system having three pulleys in the fixed block and two in the movable block is used to raise a load of 600N. If the system has an efficiency of 80%, what effort is required to raise the load? 3mks
3. A spring constant k =100Nm-1 is stretched to a distance of 20m.calculate the work done. 3mks
4. A force of 7.5N stretches a certain spring by 5 cm. how much work is done in stretching his spring by 8 cm? 4mks
5. A boy throws a ball from the ground to the top of the school flag pole. If the ball returns to the ground in 6 s, find the height of the flag pole.(ignore air resistance) 3mks