**GATITU MIXED SECONDARY SCHOOL**

**PHYSICS FORM 3 OPENER TERM 2 2015 EXAM**

**ATTEMPT ALL QUESTIONS**

1. Define refractive index. 2mks
2. Define inertia 2mks
3. State the law of inertia 1mk
4. Define acceleration and state the type of physical quantity it is. 2mks
5. A car is brought to rest from 180 km/hr in 20 s. what is its retardation? 2mks
6. Calculate the angle for refraction for a ray of light from air striking an air glass interface, making an angle of 60 with the interface (ang =1.5) 3mks
7. Define momentum 1mk
8. State the law of conservation of linear momentum. 2mks
9. 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
10. Given that velocity of light in air is 3.0 × 108ms-1 , calculate the refractive index in diamond. 2mks
11. Calculate the critical angle of diamond. 2mks
12. Determine the change in momentum produced when a force of 3.5 × 103N acts on a body which is at rest for 0.025 seconds. 2mks

1. What velocity will be given to the body if it has a mass of 20kg? 2mks
2. A ball is thrown from the top of a cliff 20 m high with a horizontal velocity of 10ms-1.

Calculate;

1. The time taken by the ball to strike the ground. 2mks
2. The distance from the foot of the cliff to where the ball strikes the ground. 2mks
3. The vertical velocity at the time it strikes the ground.(take g =10ms-2) 3mks
4. In periscopes, prisms rather than mirrors are used. State the three disadvantages of using mirrors. 3mks
5. State four applications of total internal reflection of light. 4mks