**FORM FOUR PHYSICS HOLIDAY ASSIGNMENT**

1 . Define the following terms. 5mrk

1. Critical speed
2. Thermionic emission
3. Photoelectric effect
4. Threshold frequency
5. Work function.

2 write the following waves in order of their increasing frequency,gamma, microwaves,Uv light,x-rays and infrared. 2mrks

3 find the energy of a wave with a wavelength of 6.078×10^-5m . Take the speed of light as 3.0 ×10⁸m/s and plancks constant as 6.62×10^-34J 5mrk

4 Explain what metal oxides of low work function are used in production of cathode rays 2mks

5 explain three characteristics of X-rays 6mrks.

6 state the advantages why CRO is used as a voltmeter 3mrk

7 calculate the frequency of an ac signal if it has a timebase of 20ms ,and moves 16 divisions on X axis covering 2.5 cycles. 4mrks

8 State the reasons for using graphite in the screen of CRO.3mrks.

9 The minimum frequency of a light that Will cause photoelectric emission is 5.37 ×10¹⁴Hz. When the surface is irradiated with a certain source, electrons are released at a speed of 7.9×10⁵m/s. Calculate

1. The work function of metal.3m
2. The maximum kinetic energy 3mk
3. The frequency of the source of radiation. 4mrks

Take plank constant as 6.63 ×10^-³⁴,c as 3.0 ×10⁸m/s ,mass of electron as 9.11×10^-³

10 A solid of density 2.5g/cm³ is weighed in air and the completely immersed in water in a measuring cylinder, the level of water rises from 40 cm³ to 80 cm³ determine .

( a) the volume of the solid

(b) it’s apparent weight. ( 5mrks)

11 A child whirls a stone of mass 0.5kgs. in a vertical circle on the end of a string 60cm long. At the Lowest point of the circle. The velocity of the stone is 3m/s. Calculate the tension of the string of this point. 5mrk