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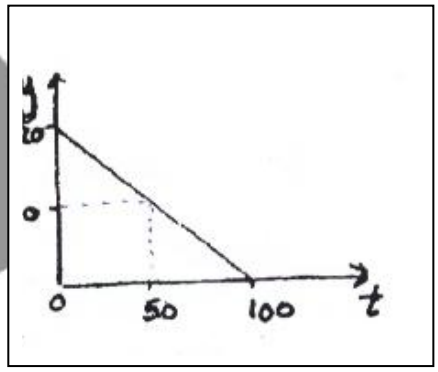
General Lab Physics-I

Date: 2005 **Med Exam**

❁ Collection and Analysis of Data:

1- For the figure shown, (y) as a function of (t) is given by:



b) 20 – 0.2t **a) 5t + 20**

d) 100 – t **c) 20 – 5t**

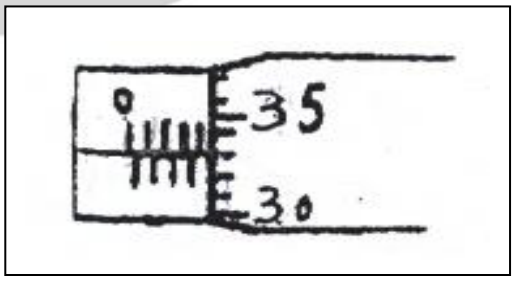
2- Given that (Z = k xn) where k and n are constants. If you plot (log Z) versus (log x) to get a straight line, then the y-intercept is:

b) k **a) log n**

d) log k **c) n**

❁ Measurements and Uncertainties:

3- The diameter of a sphere was measured by the micrometer shown in the figure, the reading (in mm) is:



b) 5.33 **a) 4.33**

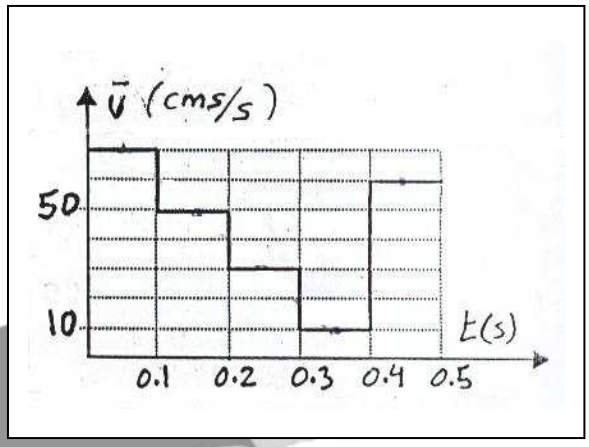
d) 4.48 **c) 4.44**

4- Five measurements of the volume of object are (3.15, 3.2, 3.16, 3.18, 3.15) the mean value of the volume (V) is:

d) 3.15 **c) 3.17** **b) 3** **a) 3.16**

❁ Kinematics of Rectilinear Motion:

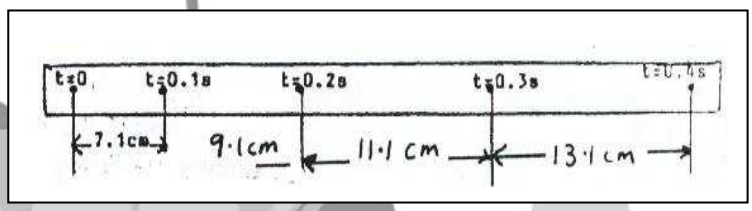
5- In the experiment of one dimensional rectilinear motion, the figure shows a histogram plot of $\bar{V}$ versus t. then the instantaneous velocity at t = 0.3 s is:



b) 30 cms/s **a) 10 cms/s**

d) 35 cms/s **c) 20 cms/s**

6- The ticker tape shown below was recorded for a certain uniformly accelerated motion. the average acceleration in (cm/s^2) Is



b) 200 **a) 293**

d) 132 **c) 260**

❁ Force and motion :

7- Find the mass of the cart from the graph of force vs acceleration for a constant mass system of mass = mass of the cart +100g

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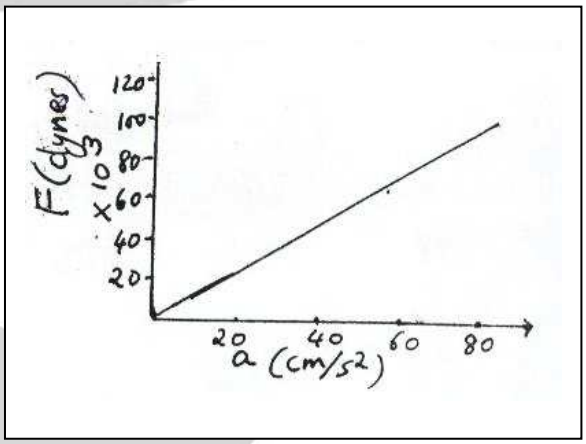
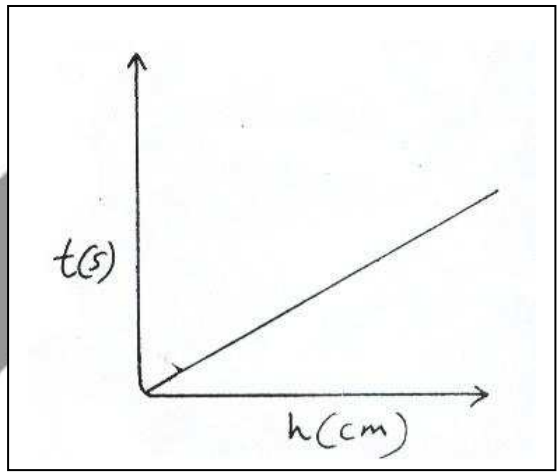


❁ **Falling Sphere Viscometer:**

8- In the graph shown (h) is the distance between the two rubber bands, (t) is the time of fall for this distance, the slope represents:



a) the terminal velocity

b) the coefficient of viscosity

c) the reciprocal of terminal velocity

d) the acceleration of the steel sphere.

9- The terminal velocity is defined to be the velocity:

a) when the ball moves with constant acceleration

b) when the ball moves with zero acceleration

c) when the ball moves with increasing acceleration

d) when the ball moves with decreasing acceleration

❁ **Specific Heat:**

10- what is the main source of error in this experiment? Due to this error will the value of specific heat obtained be greater or smaller than the expected value?

Answer key

1	2	3	4	5
b	d	a	c	c
6	7	8	9	10
b	1150	c	b	------

10- lost of heat in the surrounding / it will be smaller than the expected value