Project No Book No TITLE		box satisfared
om Page No		
1-D notion with thear day and a constant force		
larsider a falling body on Earth		
	to by the	
Di At ferminal velocity, Inj	50 Dy = Mg	
0	Year = 1012	
The forces are:		
The forces are: I for		
Newd, 2nd law:		
V		
Define ty downward:		
mg-by=my		
bytem - by = my		
b(you - vy) = mig		
5 (Vten - Vy) = vy		
-b (Vy - Vom) = Vy		
Vy = -6 (vy -40m)		
bstitle u= Vy-Ven and u= Vy. Then		
$i = -\frac{5}{4}u$		
$\dot{u} = -\frac{5}{m}u \text{and} \dot{u} = -\frac{5}{m}t$ $u = u_0 e$	·	
$U = U_0 e$		
tnessed & Understood by me, Date Invented by:	To Page No Date	<u></u>
modes a discolored by me,	Late	

21

Book No.

notion with like or dray and a courtent fixe

er a fallty body on Earth

At terminal velocity, Injury so by = mg

vees we: I fing

, 2 rd /aw:

e No.

F=mÿ e ty downward :

> mg - by = mybytem - by = my b(Vom- Vy) = my $\frac{b}{m}(V_{ter}-V_y)=V_y$ -b (Vy - Vyour) = -Vy

> > 1 - - b (y - 40m)

ke u= y-Yen and ie = vy. Then $u = u_0 e^{-b/mt}$

& Understood by me,

Invented by:

Date

From Page No. So, $V_y - V_{term} = (V_{yo} - V_{term}) e^{-\frac{b}{m}t}$ Vy = Vtem + Vys e - Vtem e Vy = Vterm (1-e-5/mt) + Vyo e - 5/mt

Suprese he object is dropped from rest: Vyo = 0 Vy = Yem (1-e-blant)

= \(\(\frac{1}{4} \) + \(\frac{1}{4} \) - \(\frac{1}{4} \) \(= $V_{4srm}t + (V_{5} - V_{4srm})(-\frac{m}{5})e^{-b/mt}$ = V_{term} t + (y₀ - y_{em})(-\frac{m}{b})e - (y₀ - y_{em})(-\frac{m}{b}) $= V_{torust} + (V_{jo} - V_{torus})(\frac{m}{b})(1 - e^{-b/mt})$ Note that as too, yet = yeart since y is constant.

Witnessed & Understood by met

/ Iner with stope = Herm

Invented by:

To Page No.