

\$20 \\ \(\begin{array}{cccccccccccccccccccccccccccccccccccc		Reg. No.	
$V_{2} = \frac{1^{2} \times 10^{2}}{8^{2} \cdot 0 \times 10^{2}}$ $V_{2} = \frac{1^{2} \times 10^{2}}{8^{2} \cdot 0 \times 10^{2}}$ $= 15 \cdot 0 \text{ ms}^{-1}$ $32b) $	320	$V_{1} = \frac{1 - 2 \times 10^{2}}{4 \cdot 0 \times 10^{-3}}$	1
			-2
32b) $SF.E = \frac{1}{2}MV_{2}^{2} - \frac{1}{2}MV_{1}^{2}$ $= \frac{1}{2}(1)(15.0^{\circ}-3.0^{\circ})$ $= 108 \text{ J kg}^{-1}(38.7)$ 82c) $W.A \neq P_{1} = \frac{F_{1}}{F_{1}}$ $= P_{1} \cdot \frac{P_{1}}{P_{2}} \text{where } S \text{ is distance moved}$ $W_{1} = \frac{P_{1}}{P_{2}} \text{where } S \text{ is distance moved}$ $W_{1} = \frac{P_{1}}{750} \text{where } S \text{ is distance moved}$ $W_{2} = \frac{1.8 \times 10^{\circ}}{750}$ $= 13.3 \text{ J kg}^{-1}(3s.7)$ 82di) $W_{2} = \frac{1.8 \times 10^{\circ}}{750}$ $= 373 \text{ J kg}^{-1}(3s.7)$ 92e) Net work done per unit mas = $13.33 + 378.3$ $= 38.7 \cdot 38.7 \text{ J kg}^{-1}(3s.7)$ $= 38.7 \cdot 38.7 \text{ J kg}^{-1}(3s.7)$	-	$V_2 = \frac{1-7 \times 10^{-2}}{8.0 \times 10^{-4}}$	
32b) $CF.E = \frac{1}{2} MV_{2}^{2} - \frac{1}{2} MV_{1}^{3}$ $= \frac{1}{2}(1)(15.0^{2} - 3.0^{2})$ $= 108 \text{ J fg}^{-1}(38.7)$ 820 $W_{1} \neq P_{1} = \frac{F_{1}}{A_{1}}$ $= P_{1} P_{2} \qquad \text{More } s \text{ is distance moved}$ $W_{1} = \frac{F_{2}}{A_{1}} \qquad \text{Move } H^{-1} \Rightarrow \text{likeum}$ $32h$ $W_{2} = \frac{1.0 \times 10^{4}}{750}$ $= 13.3 \text{ J fg}^{-1}(3s.7)$ $32e$ $W_{2} = \frac{1.8 \times 10^{5}}{750}$ $= 373 \text{ J fg}^{-1}(3s.7)$ $32e$ $W_{3} = \frac{1.3 \cdot 33 + 3.73 \cdot 3}{1.25 \cdot 10^{2}}$ $= 387 \cdot 387 \cdot 3 \cdot 10^{2} \cdot (3s.7)$ $= 387 \cdot 387 \cdot 3 \cdot 10^{2} \cdot (3s.7)$ $= 387 \cdot 387 \cdot 3 \cdot 10^{2} \cdot (3s.7)$	7	$= 15.0 \mathrm{ms^{-1}}$	
	1		
	32b)		
329 WAT $P_1 = \frac{F_1}{A_1}$ $F_1 = P_1 f_1$ $= P_1 f_2$ $W_1 = \frac{F_2}{P_1}$ where S is distance moved $W_1 = \frac{F_2}{P_2}$ since $ff = 1$ [whom) 32d) $W_2 = \frac{1 \cdot 0 \times 10^4}{750}$ $= 13 \cdot 3 \text{ J/g}^{-1}(3s \cdot f)$ 32d) $W_2 = \frac{2 \cdot 8 \times 10^5}{750}$ $= 373 \text{ J/g}^{-1}(3s \cdot f)$ $W_3 = \frac{13 \cdot 33 + 373 \cdot 3}{169}$ $= \frac{386 \cdot 387 \text{ J/g}^{-1}(3s \cdot f)}{169 \cdot 169 \cdot 169}$ $= \frac{386 \cdot 387 \text{ J/g}^{-1}(3s \cdot f)}{169 \cdot 169 \cdot 169}$ $= \frac{386 \cdot 387 \text{ J/g}^{-1}(3s \cdot f)}{169 \cdot 169 \cdot 169}$			
32d) $W_1 \neq P_1 = \frac{F_1}{A_1}$ $F_1 = P_1 A_1$ $= P_1 \frac{P_2}{P_3}$ where S is distance moved $W_1 = \frac{P_1}{P_3}$ since $\Theta = \mathbb{R} $		= 108 J kg (38-4)	S (4)
$W_{1} = \frac{f_{1}}{f_{2}} \text{ since } \{f_{1}, m=1\} \text{ [inform)}$ $W_{1} = \frac{1 \cdot o \times 10^{4}}{750}$ $= 13.3 \text{ J/g}^{-1}(3s.f)$ $W_{2} = \frac{2 \cdot 8 \times 10^{5}}{750}$ $= 373 \text{ J/g}^{-1}(3s.f)$ $W_{2} - W_{1}$ $32e) \text{ Net work done per unit mas} = 13-33+373-3$ $= \frac{38f_{1}}{387} \text{ J/g}^{-1}(3s.f)$ $f_{2} \text{ to two width}$		at rest state when it reduction of the appropriate	
$W_{1} = \frac{f_{1}}{f_{2}} \text{ since } \{f_{1}, m=1\} \text{ [inform)}$ $W_{1} = \frac{1 \cdot o \times 10^{4}}{750}$ $= 13.3 \text{ J/g}^{-1}(3s.f)$ $W_{2} = \frac{2 \cdot 8 \times 10^{5}}{750}$ $= 373 \text{ J/g}^{-1}(3s.f)$ $W_{2} - W_{1}$ $32e) \text{ Net work done per unit mas} = 13-33+373-3$ $= \frac{38f_{1}}{387} \text{ J/g}^{-1}(3s.f)$ $f_{2} \text{ to two width}$	320)	WN P, = F.	
$W_{1} = \frac{f_{1}}{f_{2}} \text{ since } \{f_{1}, m=1\} \text{ [inform)}$ $W_{1} = \frac{1 \cdot o \times 10^{4}}{750}$ $= 13.3 \text{ J/g}^{-1}(3s.f)$ $W_{2} = \frac{2 \cdot 8 \times 10^{5}}{750}$ $= 373 \text{ J/g}^{-1}(3s.f)$ $W_{2} - W_{1}$ $32e) \text{ Net work done per unit mas} = 13-33+373-3$ $= \frac{38f_{1}}{387} \text{ J/g}^{-1}(3s.f)$ $f_{2} \text{ to two width}$		ment Frep. Agree Many a at between on a bud	
32h) $W_1 = \frac{1.0 \times 10^4}{750}$ $= 13.3 \text{ J/g}^{-1}(3s.f)$ $82dii$ $W_2 = \frac{2.8 \times 10^5}{750}$ $= 373 \text{ J/g}^{-1}(3s.f)$ 32e Net work done per unit mas = $13.33 + 3.78.3= 386.387 \text{ J/g}^{-1}(3s.f)$			
32di) $W_1 = \frac{1-0 \times 10^4}{750}$ $= 13.3 \text{ T/g}^{-1}(3s.f)$ $W_2 = \frac{2.8 \times 10^5}{750}$ $= 373 \text{ J/g}^{-1}(3s.f)$ $W_2 - W_1$ 32e) Net work dure per unit mas = $13.33 + 3.78.3$ $= \frac{386.387 \text{ J/g}^{-1}(3s.f)}{4s.f}$		W, = & since the M=1 & (shown)	
$= 13.3 \text{ J/g}^{-1}(3s.f)$ $= 13.3 \text{ J/g}^{-1}(3s.f)$ $= 373 \text{ J/g}^{-1}(3s.f)$ $= 373 \text{ J/g}^{-1}(3s.f)$ $= 386-387 \text{ J/g}^{-1}(3s.f)$ $= 386-387 \text{ J/g}^{-1}(3s.f)$ $= 386-387 \text{ J/g}^{-1}(3s.f)$			
32dii) $W_2 = \frac{2.8 \times 10^5}{750}$ = 373 J/g ⁻¹ (3s-f) $W_2 - W_1$ 32e) Net work done per unit mass = 13-33+373-3 = 386-387 J/g ⁻¹ (3s-f) to the right	32di)		
$= 373 \text{ J/g}^{-1}(3s-t)$ $= 373 \text{ J/g}^{-1}(3s-t)$ $= 386 - 387 \text{ J/g}^{-1}(3s-t)$ $= 386 - 387 \text{ J/g}^{-1}(3s-t)$ $= 40 \text{ the cieft}$	-	$= 13.3 \text{ T/g}^{-1}(3r,f)$	
$= 373 \text{ J/g}^{-1}(3s-t)$ $= 373 \text{ J/g}^{-1}(3s-t)$ $= 386 - 387 \text{ J/g}^{-1}(3s-t)$ $= 386 - 387 \text{ J/g}^{-1}(3s-t)$ $= 40 \text{ the cieft}$		1	(100)
32e) Net work dure per unit mass = $13-33+378-3$ = $386-387J/g^{-1}(3s-f)$	32dii)		
= 387 J (g - (3s-f))		1	7
= 387 J (g - (3s-f))		$M_2 - M_1$	
= 387 J (g - (3s-f))	32e)	Net work done per unit mass = 13-33+378-3	a 15
to the right		$= \frac{387}{387} J_{0}^{-1} (3s-7)$	
324) Ance work done is positive, therefore the flow, is not spontaneous as every is needed to more it against the spontaneous flow from right to left. Thus, an except external pawer source is regimed.	7 0	to the right	
sportaneous as every is needed to more it against the sportaneous flow from right to left. Thus, an except external power source is regimed.	324)	since work done is positive, therefore the flow is not	P
external power source is regimed.		spontaneous as every is needed to more it against the	
external pawer source is required.		sportaneous flow from right to left. Thus, an except	
		external power source is required.	
		i.	

329)	Wp = 387 J = g - (3s-f) 360 + 108	
0		
32h)	fower = 386.7×750 ×1-2×10-2	1000
0 9	= 3480 Js-1 (3s.f)	
	X	
327	The Hund getral is a riverous flerid and flower in a	
	The find petrol is a viocous fluid and flow in a non-laminar fashion, thus mechanical power required is higher as frictional forces must be overcome.	<i></i>
29	to latellier as existional borrow must be over come	
	is progress as stronger of the street	10
220	The can alow the electron of the open molecules and	
SOU!	The gas along the electrons of the gas molecules are at rest state. When I radiation of the appropriate	
	at rest since. When & ragranding the appropriate	0.0
	frequency strike them, they will absorb the radiation	NO - 7.
	and are elevated to a higher energy level, from which they will fall back to resting state and	
	which they will fall back to resting state and	
,	dissipate their energy as radiation, giving rise to an emission spectrum where only set particular frequencies of light are emitted.	
	emission spectrum where only set particular frequencies	
	of light are emitted.	K.S.
	1 / (4 52) 1 / (4 T) & 2 / 1 =	
33aii)	E = h f	
	E, = 6.63 × 10-39 × 97-1 × 10-9	k E
	= f-44 ×10-41 5 (3s-f)	10 P
	$= 6 - 44 \times 10^{-41} J (3s-f)$ $E_2 = 6 - 63 \times 10^{-31} \times 485 \times 10^{-9}$	16EO
	= f-44 ×10-41 5 (3s-f)	
	$= 6.44 \times 10^{-41} J (3s.f)$ $E_{2} = 6.63 \times 10^{-31} \times 485 \times 10^{-9}$ $= 3.22 \times 10^{-90} J (3s.f)$ $E_{3} = 6.63 \times 10^{-39} \times 654 \times 10^{-9}$	
	$= 6.44 \times 10^{-41} J (3s.f)$ $E_{2} = 6.63 \times 10^{-31} \times 485 \times 10^{-9}$ $= 3.22 \times 10^{-90} J (3s.f)$ $E_{3} = 6.63 \times 10^{-39} \times 654 \times 10^{-9}$ $= 4.34 \times 10^{-40} J (3s.f)$	
	$= 6.44 \times 10^{-41} J (3s.f)$ $E_{2} = 6.63 \times 10^{-31} \times 485 \times 10^{-9}$ $= 3.22 \times 10^{-90} J (3s.f)$ $E_{3} = 6.63 \times 10^{-39} \times 654 \times 10^{-9}$ $= 4.34 \times 10^{-40} J (3s.f)$	95) 25)
	$= 6.44 \times 10^{-41} J (3s.f)$ $E_{2} = 6.63 \times 10^{-34} \times 485 \times 10^{-9}$ $= 3.22 \times 10^{-40} J (3s.f)$ $E_{3} = 6.63 \times 10^{-34} \times 654 \times 10^{-9}$ $= 9.34 \times 10^{-40} J (3s.f)$	10 m m m m m m m m m m m m m m m m m m m



2	0,7	165
	-6-94×10-41J	
	~ , 15-11×10.3 = "Vn =	
	THE IX SECTION OF THE	
_	- B.22 ×10-10J)
7	-9-34 ×10 407	
	Exercise 2 (8.8) 2 = 2 (8.8) 2 = 3	2
-	-1.24 x 10-38 J	
	$E = MC^2$	
oi) 🗞	hole lead-lined appere coated with zinc su	phide
lead	hox thin sheet of gold foil	
	1,31x 0.8 (0.x 93-1)	
Rodioacti so urce	light nucroscope (morable)	
RJ9	Alpha controler are less portration that i	
9	or cooks pertucles and view coulse low don't	
	traceur seaset resto of	
Tho	radioactive source was enclosed in a lead box wo	th a
only	a small hole facing the gold foil to allow a part ugh. The light microscope was used to observe	ticles
thron	ugh. The light microscope was used to observe	100
seint	illation of light caused by x-particles striking th	e).
Zen	suppose. In the second second of the	
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show	ing that sax nort to a particles passed through to and that the gold nucleus occupied a negligible	he
foil	and that the gold nucleus occupied a negligible	2
		1
ATA	sandlad A few scintillations were observed behind radioactive source, showing that the x-particle been reflected by the small but highly posselively	
the 1	radioactive source, showing that the x-particles	,
100	have allost I be the anall but highly and inte	

	positively-charged nucleus mider	
	possession of consider the constant	
33bii)	1 222 p 5218 p + 4 x	
00011)	$\frac{1}{86}R_{n} \longrightarrow \frac{218}{84}P_{0} + \frac{4}{2} \times$	
-	0 1 11/2 0 01 10-17	
	2. $\pm mV^2 = 8 \cdot 61 \times 10^{-13}$	
	$\sqrt{\frac{2(8-6)\times10^{-27}}{2(1-67\times10^{-27})}} + .00260\times1.08\times0^{-27}$	h
	= 1-61×107 M5- (35-f)	
	3. Energy released = 2(8-61×10-13)	
	= 172 × 10-12 J (35.4)	
a =	$E = MC^2$	
	Energy released = $\triangle mc^2$	(13.18
•	= (-218.00908 + 4.00260 + 222.01754)	
	$(1-66 \times 10^{-27}) (3.0 \times 10^{8})^{2}$	
	= 5.30×1019 J (30-4)	
	4 Alpha maticles are less constration that beta	
	4. Alpha particles are less penetrating that beta or gamma particles and will cause less clamage to other tissues.	
-	La athan time ou	
	TO PULL WHAVE.	
24	0 - 0 - Clu - 1/0 1 D	
3(a)	BA Flux = NBA cos 9	
	where N represents w. of coils	
7	B represents magnetic field strength	
	A represents area of flux-cutting I represents argle to the normal of plane	
	I represent angle to the normal of plane	
2	when that he not account as a passed through the	
	that and that the sold revolver strupied a restigite	
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	Name: Subject:	
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		- ,
39bi)	1. The production of the other seasons and the seasons and the	
	B () son alt jotk at about	
	230	
	Vmg	
	2. Current must flow from X to W	
		-
	3. F=BIL sin O	
	$my \cos(90-23^\circ) + py = BIL \sin \theta$	
	(SQ)(9-81) = (0-40)(0-15)(pm)(I)	
	$I = \frac{(c_0)(q-\delta l)\cos(q_0^*-23^{\circ})}{(c_0^*+c_0)(c_0^*)}$	1
	= 0-37 A (20-f) shown	
34 kij)	1. F=BILsing	
Hail	De Flaming Fight land rule cument Along from	
	By Fleming's right hard rule, current flows from 2 to W.	1=
	F=BIL sin 0	
)	$I = \frac{F}{8L \sin \theta}$	1
	=	
	8	
,		
		9

2 Pullward law direction of induced at the	
2. By Lery's New, all could be induced electromotive	*
force is such as to oppose the charge of magnetic	
flux producing it. Thus the induced magnetic force	
2. By Lerz's law, direction of induced electromotive force is such as to oppose the charge of magnetic fluor producing it. Thus, the induced magnetic force tends to stop the rod.	
3.	
E. Surerit quest floi from I LaW.	
Comment of the same of the sam	
0.1.170 1	
3. F=BIL pin 9	
frix 121 = 126 (5) (100) gra	
- (I) (1) (1) (1) (1) (1) (1) (1)	
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1.00 to 12.20 4 12.00 =	7
Ena II = 7	(And
By Flerisas Posit hard rule, current flows from	
4. Ema	
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