RGS	RGS									
	RGS									
	SS SS	RGS	Raffl	es Gi (SECO	irls'		ol			
Established	in 1879									
Name:	RGS	RGS	RGS	RGS	RGS	RGS				
Class:	RGS	RGS					Regi	ster No:	RGS	RGS
				PH	YSICS					
				YEAR	THRE	RGS				
			End	-of-Yea	r Asses	ssment				
Thursday				7 Oct	ober 202	RGS			RGS 2 h	ours
INSTRUC				RGS	RGS	RGS	RGS	For exa	miner's	use
RGS				number in	the space	es provide	d.	Question Section		arks ained
Write in d For Secti				s on the s	eparate A	nswer Sh	eet	DCC	ion A / 2	DCC
provided.	,	,								-
	I other a	ucotiono i	n the ene	and provid	lad			1-20		
All quantit	ative an	swers sho	ould includ	ces provid de appropi	riate units		RGS	RGS	ion B / 6	0
All quantit You are a manner, a	ative and dvised to as more i	swers sho show all marks are	ould includ your wor		riate units lear and o	orderly	RGS nRGS	RGS	ion B / 6	0 / 9
All quantit You are a manner, a for correc	ative and dvised to as more i	swers sho show all marks are	ould includ your wor	de appropi king in a c l for sound	riate units lear and o luse of Pl	orderly hysics tha	RGS nRGS	Sect	ion B / 6	
All quantit You are a manner, a for correc	tative and dvised to as more i t answer	swers sho o show all marks are s.	ould includ your wor awarded	de appropi king in a c I for sound	riate units lear and o	orderly	RGS nRGS RGS	Sect 21	ion B / 6	/9
All quantit You are a manner, a for correc	tative and dvised to as more i t answer	swers sho o show all marks are s.	ould includ your wor awarded	de appropi king in a c I for sound	riate units lear and o luse of Pl	orderly hysics tha	RGS nRGS RGS RGS	Sect 21 22	ion B / 6	/ 9 / 8
All quantit You are a manner, a for correc	tative and dvised to as more in t answer	swers sho o show all marks are s. OR CANI	ould includ your wor awarded	de appropi king in a c l for sound	riate units lear and d l use of Ph	orderly hysics tha	RGS nRGS RGS RGS	Sect 21 22 23		/ 9 / 8 / 10
All quantit You are a manner, a for correc INFORM Assume g	tative and dvised to as more in t answer ATION F	swers sho o show all marks are s. OR CANI N kg ⁻¹ unle	ould includ your wor awarded DIDATES ess stated	de appropr king in a c l for sound	riate units clear and c l use of Pt	orderly hysics tha	RGS nRGS RGS RGS	Sect 21 22 23 24		/ 9 / 8 / 10 / 10
All quantit You are a manner, a for correc INFORM Assume g	ative and dvised to as more in t answer ATION F a = 9.81 I per of ma	swers sho o show all marks are s. OR CANE N kg ⁻¹ unle urks is give	ould includ your wor awarded DIDATES ess stated	de appropi king in a c l for sound	riate units clear and c l use of Pl	orderly hysics tha	RGS nRGS RGS RGS RGS	Sect 21 22 23 24 25		/ 9 / 8 / 10 / 10 / 11
All quantit You are a manner, a for correct INFORM/ Assume g The numb question of You may	tative and dvised to as more in t answer ATION F y = 9.81 I per of mator part quito be penal	swers sho o show all marks are s. OR CANE N kg ⁻¹ unle urks is give uestion. ised for ir	DIDATES ess stated en in brac	de appropr king in a c l for sound d otherwise kets [] at se of units	riate units clear and o l use of Pf e. the end o	orderly hysics tha f each ot giving	RGS RGS RGS	Sect 21 22 23 24 25 26		/ 9 / 8 / 10 / 10 / 11 / 4
All quantit You are a manner, a for correct INFORM/ Assume g The numb question of You may quantitativ	tative and dvised to as more in t answer ATION F g = 9.81 f ber of ma bor part qu be penal ve answe	swers sho o show all marks are s. OR CANE N kg ⁻¹ unle urks is give uestion. ised for in ers to an a	Didates Didates Didates ess stated en in brac	de appropr king in a c l for sound d otherwise kets [] at se of units te number	riate units lear and o l use of Ph e. the end o s and/or no of signific	orderly hysics that f each ot giving cant figure	R IS R IS	Sect 21 22 23 24 25 26 27 20 27 units /		/ 9 / 8 / 10 / 10 / 11 / 4
All quantit You are a manner, a for correct INFORM/ Assume g The numb question of You may quantitativ	tative and dvised to as more in t answer ATION F g = 9.81 f ber of ma bor part qu be penal ve answe	swers sho o show all marks are s. OR CANE N kg ⁻¹ unle urks is give uestion. ised for in ers to an a	Didates Didates Didates ess stated en in brac	de appropr king in a c l for sound d otherwise kets [] at se of units	riate units lear and o l use of Ph e. the end o s and/or no of signific	orderly hysics that f each ot giving cant figure	R IS R IS	Sect 21 22 23 24 25 26 27 units / sig.fig.	ion B / 60	/ 9 / 8 / 10 / 10 / 11 / 4 / 8
All quantit You are a manner, a for correct INFORM/ Assume g The numb question of You may quantitativ The total 40%.	ative and dvised to as more in t answer ATION F a = 9.81 I ber of ma be penal ve answer number of	swers sho o show all marks are s. OR CANE N kg ⁻¹ unle urks is give uestion. ised for in ers to an a of marks f	DIDATES eass stated en in brace appropriat	de appropr king in a c l for sound d otherwise kets [] at se of units te number	riate units lear and o l use of Ph e. the end o s and/or no of signific	orderly hysics that f each ot giving cant figure	R IS R IS	Sect 21 22 23 24 25 26 27 units / sig.fig. Total	F GS F GS F GS F GS F GS	/ 9 / 8 / 10 / 10 / 11 / 4 / 8 / 80
All quantit You are a manner, a for correct INFORM/ Assume g The numb question of You may quantitativ The total 40%.	ative and dvised to as more in t answer ATION F a = 9.81 I ber of ma be penal ve answer number of	swers sho o show all marks are s. OR CANE N kg ⁻¹ unle urks is give uestion. ised for in ers to an a	DIDATES eass stated en in brace appropriat	de appropr king in a c l for sound d otherwise kets [] at se of units te number	riate units lear and o l use of Ph e. the end o s and/or no of signific	orderly hysics that f each ot giving cant figure	R IS R IS	Sect 21 22 23 24 25 26 27 units / sig.fig. Total	F GS F GS F GS F GS F GS	/ 9 / 8 / 10 / 10 / 11 / 4 / 8 / 80
All quantit You are a manner, a for correct INFORM/ Assume g The numb question of You may quantitativ The total 40%.	ATION F as more in t answer ATION F a = 9.81 I ber of ma be penal ve answe number o	swers sho o show all marks are s. OR CANE N kg ⁻¹ unle urks is give uestion. ised for in ers to an a of marks f	DIDATES eass stated en in brace appropriat	de appropr king in a c l for sound d otherwise kets [] at se of units te number	riate units lear and o l use of Ph e. the end o s and/or no of signific	orderly hysics that f each ot giving cant figure	R IS R IS	Sect 21 22 23 24 25 26 27 units / sig.fig. Total	F GS F GS F GS F GS F GS	/ 9 / 8 / 10 / 10 / 11 / 4 / 8 / 80

I	Raffles Gir	ls' School	(Secondai	y)	Rec	1100	Res	1100	End-of-	Year Asses	ssment
RGS	SECTION	A (20 ma	irks)								
					tion, there and your cho				、 · · ·	,	oose
RGS 1	A pie	ece of pap	per is allo	wed to fall	l through a	vacuum	in an exp	eriment.			
	R Whic	h row de	scribes th	e accelera	ation and v	elocity o	f the pape	er?RGS			
	RGS	RGS	acc	eleration	RGS	RGS	vel	ocity	RGS		
	Α		CC	onstant			con	stant			
	В	RGS	co	onstant	RGS	RGS	incre	asing	RGS		
	С	RGS	inc	reasing	RGS	RGS	con	stant	RGS		
	D		inc	reasing			incre	asing			
	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS		
RGS ²	2 Whic	h graph s	shows the	e accelera	tion-time gr	aph of a	n eraser	which is	dropped fr	om a desl	<br RGS
				accelera	tion RGS		RGS A				
				RGS		3	BGS				
				RGS		\succ	C D				
				RGS		RGS	RGS → tin	RGS			
RGS 3	The	diagram s	shows ho	w the disp	lacement c	of a ball \	/aries with	n time du	iring a garr	RGS ne.	
		RGS d	isplacem	ent							
			RGS	RGS							
			RGS	RG	A	¢C	RGS	RGS			
			RGS	kgs	RGSB	RGS	DGS				
			RGS	RGS	RGS	RGS	RGS	\rightarrow	time		
	Whic	h part of	the graph	n shows th	e highest s	peed?					
RGS 4	Whic	ch of the f	ollowing i	s a non-co	ontact force	?GS					
	A B	frictio norm	al								
	CD	tensio weigh									
RGS	RGS	RGS	RGS	RGS	RGS 2	RGS	RGS	RGS	RGS	RGS	RGS

Ra	ffles Girls	s School (S	secondary)	/					End-of-	ear Asses	sment
GS 5	-	rachutist f			velocity. \	Which of	the follow	ing free-l	body diag	rams cor	rectly
	show	s the force	es acting	on him?							
		KGS					KGS				
	RĠS	RGS				B	RGS				
		RGS					RGS				
	С	RGS				D	RGS				
		RGS					RGS				
GS ⁶		x of mass m s ⁻² . If it									
	Α	0.10 N	DCS								
	В	0.20 N									
	С	0.30 N									
	D	0.40 N	RGS								
GS 7	Whic	h stateme	nt best ex	xplains N	ewton's fir	rst law?					
	A	An obi	iect at res	st will rem	ain at res	RGS					
	A B				ain at res		nen resulta	ant force a		it is zero.	
	A B C	An obj When	ject does an object	not unde	ain at res rgo accele force on a	eration wh	nen resulta	ant force a	acting on	it is zero.	
	В	An obj When oppos	ject does an object ite force.	not unde t exerts a	rgo accele force on a	eration wh another o	nen resulta bject, it w	ant force a ill experie	acting on nce an ec	it is zero. _l ual and	
	B C	An obj When oppos	ect does an object ite force. agnitude	not unde t exerts a	rgo accele	eration wh another o	nen resulta bject, it w	ant force a ill experie	acting on nce an ec	it is zero. _l ual and	orce
	B C D	An obj When oppos The m	ject does an object ite force. agnitude on it.	not unde t exerts a of an obj	rgo accele force on a ect's acce	eration wh another o eleration is	nen resulta bject, it wi s directly p	ant force a ill experie proportion	acting on nce an ec nal to the r	it is zero. _l ual and resultant f	orce
-	B C D When	An obj When oppos The m acting	ject does an object ite force. agnitude on it. celerates	not unde t exerts a of an obj up a hill,	rgo accele force on a ect's acce which of t	eration wh another o eleration is the followi	nen resulta bject, it w s directly p ng best d	ant force a ill experie proportion escribes v	acting on nce an ec nal to the r what happ	it is zero. qual and resultant f pens?	orce
	B C D When	An obj When oppos The m acting n a car acc The ca	ject does an object ite force. agnitude on it. celerates ar gains b	not unde t exerts a of an obj up a hill, ooth gravi	rgo accele force on a ect's acce which of t tational po	eration wh another o eleration is the following otential er	nen resulta bject, it wi s directly p ng best d nergy and	ant force a ill experie proportion escribes v kinetic er	acting on nce an ec nal to the r what happ nergy.	it is zero. _l ual and resultant f	orce
GS GS ₈ GS	B C D When A B	An obj When oppos The m acting n a car acc The ca The ca	ject does an object ite force. agnitude on it. celerates ar gains b ar gains g	not unde t exerts a of an obj up a hill, poth gravi gravitatior	rgo accele force on a ect's acce which of t tational po nal potenti	eration wh another o eleration is the following otential er al energy	nen resulta bject, it wi s directly p ng best d nergy and but loses	ant force a ill experie proportion escribes v kinetic en kinetic en	acting on nce an ec nal to the r what happ nergy. nergy.	it is zero. Jual and resultant f pens?	orce R
GS GS ₈ GS	B C D When	An obj When oppos The m acting n a car acc The ca The ca The ca	ject does an object ite force. agnitude on it. celerates ar gains b ar gains b ar gains b ar gains k	not unde t exerts a of an obj up a hill, poth gravi gravitation cinetic en	rgo accele force on a ect's acce which of t tational po	eration wh another o eleration is the following otential er al energy oses gravi	nen resulta bject, it w s directly p ng best d nergy and but loses itational p	ant force a ill experie proportion escribes v kinetic en kinetic en otential en	acting on nce an ec hal to the r what happ nergy. nergy. nergy.	it is zero. qual and resultant f pens?	orce R
GS GS GS GS GS	B C D When A B C D	An obj When oppos The m acting n a car acc The ca The ca The ca The ca	ject does an object ite force. agnitude on it. celerates ar gains b ar gains b ar gains k ar gains k ar gains k	not unde t exerts a of an obj up a hill, poth gravi gravitation cinetic en both grav	rgo accele force on a ect's acce which of t tational po hal potenti ergy but lo vitational p	eration wh another o eleration is the following otential er al energy oses gravio potential e	nen resulta bject, it wi s directly p ng best d nergy and but loses itational p energy and	ant force a ill experie proportion escribes v kinetic en kinetic en otential en d kinetic e	acting on nce an ec hal to the r what happ nergy. nergy. nergy.	it is zero. Jual and resultant f pens?	orce RG
GS GS GS GS	B C D When A B C D	An obj When oppos The m acting n a car acc The ca The ca The ca The ca	ject does an object ite force. agnitude on it. celerates ar gains b ar gains b ar gains b ar gains k are loses g 700 N r	not unde t exerts a of an obj up a hill, ooth gravi gravitation doth gravi both grav	rgo accele force on a ect's acce which of t tational potenti ergy but lo vitational p flight of st	eration wh another o eleration is the following otential er al energy oses gravio otential e	nen resulta bject, it wi s directly p ng best d nergy and but loses itational p energy and	ant force a ill experie proportion escribes v kinetic en kinetic en otential en d kinetic e	acting on nce an ec nal to the r what happ nergy. nergy. nergy. energy.	it is zero. Jual and resultant f pens?	orce
GS GS GS GS GS	B C D When A B C D	An obj When oppos The m acting n a car acc The ca The ca The ca The ca	ject does an object ite force. agnitude on it. celerates ar gains b ar gains b ar gains b ar gains k are loses g 700 N r	not unde t exerts a of an obj up a hill, ooth gravi gravitation doth gravi both grav	rgo accele force on a ect's acce which of t tational potenti ergy but lo vitational p flight of st	eration wh another o eleration is the following otential er al energy oses gravio otential e	nen resulta bject, it wi s directly p ng best d nergy and but loses itational p energy and	ant force a ill experie proportion escribes v kinetic en kinetic en otential en d kinetic e	acting on nce an ec nal to the r what happ nergy. nergy. nergy. energy.	it is zero. qual and resultant f pens?	orce RG
GS GS GS GS GS 9	B C D When A B C D	An obj When oppos The m acting n a car acc The ca The ca The ca The ca	ject does an object ite force. lagnitude on it. celerates ar gains b ar gains b ar gains k are loses g 700 N r erage pov	not unde t exerts a of an obj up a hill, ooth gravi gravitation doth gravi both grav	rgo accele force on a ect's acce which of t tational potenti ergy but lo vitational p flight of st	eration wh another o eleration is the following otential er al energy oses gravio otential e	nen resulta bject, it wi s directly p ng best d hergy and but loses itational p energy and n in heigh	ant force a ill experie proportion escribes v kinetic en kinetic en otential en d kinetic e d kinetic e	acting on nce an ec hal to the r what happ hergy. hergy. hergy. energy.	it is zero. Jual and resultant f pens?	orce RG RG RG
GS GS GS GS GS GS	B C D When A B C D A ma What A B	An obj When oppos The m acting n a car acc The ca The ca The ca the ca the ca 230 W 350 W	ject does an object ite force. agnitude on it. celerates ar gains b ar gains b ar gains b ar gains k are loses g 700 N r erage pov	not unde t exerts a of an obj up a hill, ooth gravi gravitation doth gravi both grav both grav	rgo accele force on a ect's acce which of t tational potenti ergy but lo vitational p flight of st	eration whanother o eleration is the following otential er al energy oses gravio otential e teps 6.0 m he man?	nen resulta bject, it wi s directly p ng best d hergy and but loses itational p energy and n in heigh	ant force a ill experie proportion escribes v kinetic en kinetic en otential en d kinetic e d kinetic e	acting on nce an ec hal to the r what happ nergy. nergy. energy.	it is zero. qual and resultant f pens?	orce Ra Ra Ra Ra
GS BS BS BS BS BS BS	B C D When A B C D A ma What A B C	An obj When oppos The m acting n a car acc The ca The ca The ca the ca the ca 230 W 350 W 1400 V	ject does an object ite force. hagnitude on it. celerates ar gains b ar gain	not unde t exerts a of an obj up a hill, ooth gravi gravitation doth gravi both grav	rgo accele force on a ect's acce which of t tational potenti ergy but lo vitational p flight of st rated by th	eration wh another o eleration is the following otential er al energy oses gravio otential e	nen resulta bject, it wi s directly p ng best d hergy and but loses itational p energy and n in heigh	ant force a ill experie proportion escribes v kinetic en kinetic en otential en d kinetic e d kinetic e	acting on nce an ec hal to the r what happ hergy. hergy. hergy. energy.	it is zero. Jual and resultant f pens?	rorce Rd Rd Rd Rd Rd
GS 8 GS 9 GS 9 GS	B C D When A B C D A ma What A B	An obj When oppos The m acting n a car acc The ca The ca The ca the ca the ca 230 W 350 W	ject does an object ite force. hagnitude on it. celerates ar gains b ar gain	not unde t exerts a of an obj up a hill, poth gravi gravitation both grav both grav	rgo accele force on a ect's acce which of t tational potenti ergy but lo vitational p flight of st rated by th	eration whanother o eleration is the following otential er al energy oses gravio teps 6.0 m teps 6.0 m	nen resulta bject, it wi s directly p ng best d hergy and but loses itational p energy and n in heigh	ant force a ill experie proportion escribes v kinetic en kinetic en otential en d kinetic e d kinetic e t in 3.0 s.	acting on nce an ec hal to the r what happ nergy. nergy. nergy. energy.	it is zero. gual and resultant f pens? RGS RGS	rorce RG RG RG RG RG
GS B G G G G S G S G S G S	B C D When A B C D A ma What A B C D	An obj When oppos The m acting n a car acc The ca The ca The ca The ca tis the ave 230 W 350 W 1400 V 13000	ject does an object ite force. hagnitude on it. celerates ar gains b ar gains b ar gains b ar gains k are loses g 700 N r erage pov	not unde t exerts a of an obj up a hill, ooth gravi gravitation doth gravi both grav both grav	rgo accele force on a ect's acce which of t tational potenti ergy but lo vitational p flight of st rated by th	eration whanother o eleration is the following otential er al energy oses gravio teps 6.0 m teps 6.0 m teps 6.0 m	nen resulta bject, it wi s directly p ng best d hergy and but loses itational p energy and n in heigh	ant force a ill experie proportion escribes v kinetic er kinetic er otential er d kinetic e d kinetic e t in 3.0 s.	acting on nce an ec hal to the r what happ nergy. nergy. nergy. energy.	it is zero. gual and resultant f pens? RGS RGS RGS	rorce Rd Rd Rd Rd Rd Rd Rd Rd
GS B G S G S B S S S S S S S S S S S S S	B C D When A B C D A ma What A B C D	An obj When oppos The m acting n a car acc The ca The ca The ca the ca the ca 230 W 350 W 1400 V	ject does an object ite force. hagnitude on it. celerates ar gains b ar gains b ar gains b ar gains k are loses g 700 N r erage pov	not unde t exerts a of an obj up a hill, ooth gravi gravitation doth gravi both grav both grav	rgo accele force on a ect's acce which of t tational potenti ergy but lo vitational p flight of st rated by th	eration whanother o eleration is the following otential er al energy oses gravio teps 6.0 m teps 6.0 m teps 6.0 m	nen resulta bject, it wi s directly p ng best d hergy and but loses itational p energy and n in heigh	ant force a ill experie proportion escribes v kinetic er kinetic er otential er d kinetic e d kinetic e t in 3.0 s.	acting on nce an ec hal to the r what happ nergy. nergy. nergy. energy.	it is zero. gual and resultant f pens? RGS RGS	rorce Rd Rd Rd Rd Rd Rd Rd Rd
GS B G S B G S B S S S S S S S S S S S S	B C D When A B C D A ma What A B C D What A	An obj When oppos The m acting n a car acc The ca The ca The ca The ca the ca a car acc a car a car a car acc a car a car a car acc a car ac	ject does an object ite force. lagnitude on it. celerates ar gains b ar gain	not unde t exerts a of an obj up a hill, ooth gravi gravitation sinetic en both grav both grav uns up a ver gener	rgo accele force on a ect's acce which of t tational potenti ergy but lo vitational p flight of st rated by th	eration whanother o eleration is the followin otential er al energy oses gravio otential er teps 6.0 m te man?	nen resulta bject, it wi s directly p ng best d hergy and but loses itational p energy and n in heigh	ant force a ill experie proportion escribes v kinetic en otential en d kinetic en d kinetic en t in 3.0 s.	acting on nce an ec hal to the r what happ nergy. nergy. energy. RGS	it is zero. gual and resultant f pens? RGS RGS RGS RGS	rorce Rd Rd Rd Rd Rd Rd Rd Rd Rd Rd Rd Rd Rd
GS GS GS GS GS GS	B C D When A B C D A ma What A B C D What A B C D	An obj When oppos The m acting n a car acc The ca The ca The ca The ca tis the ave 230 W 350 W 1400 V 13000	ject does an object ite force. lagnitude on it. celerates ar gains b ar gains	not unde t exerts a of an obj up a hill, poth gravitation dinetic en- both grav uns up a ver gener anges in a $y \rightarrow grav$ by $\rightarrow kine$	rgo accele force on a ect's acce which of t tational potenti ergy but lo vitational p flight of st rated by th a hydroele ritational p	eration whanother of eleration is the following otential energy poses gravit potential energy poses gravit potential energy potential energy	nen resulta bject, it wi s directly p ng best d hergy and but loses itational p energy and n in heigh n in heigh er produc nergy → k ational po	ant force a fill experie proportion escribes w kinetic en otential en d kinetic en d kinetic en t in 3.0 s.	acting on nce an ec hal to the r what happ hergy. hergy. hergy. hergy.	it is zero. gual and resultant f pens? RGS RGS RGS	orce RG RG RG
GS GS GS GS GS GS GS 10	B C D When A B C D A ma What A B C D What A	An obj When oppos The m acting n a car acc The ca The ca The ca The ca The ca an weighing is the ave 230 W 350 W 1400 V 13000	ject does an object ite force. hagnitude on it. celerates ar gains te ar gains	not under t exerts a of an obj up a hill, poth gravitation dinetic en- both gravitation both gravitation uns up a ver gener anges in a by \rightarrow grav by \rightarrow kine tential en	rgo accele force on a ect's acce which of t tational potenti ergy but lo vitational p flight of st rated by th a hydroele	eration what another o eleration is the followin otential er al energy poses gravit potential er teps 6.0 m teps 6.0 m terman?	nen resulta bject, it wi s directly p ng best d hergy and but loses itational p energy and n in heigh energy and h in heigh energy → l ational po rgy → ele	ant force a fill experie proportion escribes w kinetic en otential en d kinetic en d kinetic en t in 3.0 s. t in 3.0 s.	acting on nce an ec hal to the r what happ nergy. nergy. energy. RGS RGS RGS RGS	it is zero. gual and resultant f pens? RGS RGS RGS RGS	rorce Rd Rd Rd Rd Rd Rd Rd Rd Rd Rd Rd Rd Rd

	Raffles Girl	s' School ((Secondary	RGS /)	RGS	RGS	RGS	RGS	End-of-Y	éar Asses	sment
									stop. If the		nas a
	RGS	12 m	RGS	s ine spec			St Delore			RGS	
	B C D	16 m 17 m 24 m	S ⁻¹ S ⁻¹								
	RGS	RGS	RGS								
	12 Wh	ich object	t is most s	table?							
	RGS	Ags	RGS	RGS	RGS	C RGS /	RGS	D Trgs	\bigcirc		
	RGS		RGS	kas	RGS	RGS	RGS	RGS	265	RGS	
				side 10 cm a force of					int betwee v.	n two adji	acent
				RGS 10) cm	RES					
					\checkmark	5.0	RGS				
	What	t is the mo	oment abo	out P due	to the for	RGS	RGS				
	B	0 N c 25 N	mRGS								
	C D	50 N 56 N	cm								
		diagram b	elow sho	ws a hang	ing toy fo	or babies.					
		RGS		RGS	RGS	RGS	RGS				
				RGS	6	6	Jess				
					RGS	5G	Jes				
	Whic	h of the fo	ollowing s	hows the	weight of	each sha	pe in incr	easing o	der?		
	A B		< raindro < cloud <								
	C D	heart	< raindro	•							
RGS	RGS	RGS	RGS	RGS	RGS 4	1 RGS	RGS	RGS	RGS	RGS	RGS

	Raffles Girl	s' School (Secondary)						End-of-`	Year Asses	sment
RGS	15 Whic	ch of the fo	ollowing w	aves is n	nost suital	ble for de	stroying ca	incer cell	s? ^{PGS}	RGS	RGS
	AB	•	na rays sonic wave	RGS							
	C D	ultrav X-ray	violet rays s								
			-				relationship	betwee	n the fre	quency f	of an
	elect	romagnet	ic wave ar	nd its wa	velength λ	RGS					
	RAS	f GS	RGS	RGS		B	fags 1				
		RGS					RGS	RGS	RGS		
		RGS	RGS				RGS	RGS	RGS		
		0	RGS	λ			0	RGS	λ		
		RGS					RGS				
	RGS	R				RGS	RGS				
		RGS	RGS								
		RGS	RG	RGS			RGS		RGS		
		0	RGS	Rλ			RGS	RGS	RλS		
	RGS 17 Whic	h of the fo	ollowing w	aves con	isist of cor	mpressio	ns and rare	factions	RGS		
	A	infra-re radio w	d waves			RGS					
	B C D		und waves	RGS							
RGS	RGS	RGS	RGS	RGS	RGS 5	RGS	RGS	RGS	RGS	[Turn O	ver GS

RGS	Paffles Ci	de' School	(Secondar	RGS					RGS End-of-	/ear Asses	sment
RGS			(Secondar)	RGS	RGS	RGS	RGS	RGS	RGS		Sment
			diagram s				liating from	n a point			
					KGS	RGS					
				RGS			RGS				
				1	-		//				
					((00	P)	Ras	RGS			
				14	C	\mathcal{I}					
				RG							
					RGŚ		RGS				
			en for a w			from P to	Q is 10 s,	and the	wavelengt	h of the w	aves
	R A	0.20 m									
	B C D	0.80 m 1.0 m 1.3 m	s ⁻¹ RGS								
RGS 1		•	shows a lig gle of incid		• •						
	X?	RGS	RGS	RGS		RGS	RGS			RGS	
						light r	ay				
				RGS	RGS	RGS	RGS				
					A	17	BRGS				
					RGSX	K	rGS				
						D	RGS				
RGS	RGS	RGS	RGS	RGS	RGS 6	RGS	RGS	RGS	RGS	RGS	RGS

GS F	Raffles Girls	s' School (Secondary	RGS 1	RGS	RGS	RGS	RGS	End-of-`	Year Asses	sment
GS 2	20 The	diagram s	shows a lig	ght ray tra	avelling fro	m mediu	m X to me	edium Y.			
					RGS						
					KGS						
					ROS		RGS	medium Y			
		RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS		
					RGS	RGS	RGS	medium X			
					RGS		RGS				
	R Whic	h row cor	mpares m	edium X	with mediu	ım Y corr	ectly?				
GS	RGS	RGS	medium	X RGS	RGS	RGS n	nedium Y	RGS	RGS		
GS	ARGS	ligh	nt travels f	aster	RGS	higher	refractive	index	RGS		
GS	B	RGS	nt travels f	RGS	RGS	RGS	efractive	RGS	RGS		
GS	C D ^{RGS}	DCS	t travels s	DCS	RGS	DCS	refractive refractive	DCS	RGS		
GS	RGS	RGS	RGS	RGS	RGS		RGS	RGS	RGS		
GS	RGS	RGS	RGS	RGS	RGS7	DCS	RGS	RGS	RGS	[Turn O	ver

Answer ALL questions.			sment
GS Answer ALL questions.		of-Year Asses	RGS
21 Fig. 21.1 shows how the height of a falling object A varies with time	e.s RG		
height / m			
40.0			
30.0			
	ne / s		
Fig. 21.1 RGS RGS RGS RGS RGS RGS RGS RGS RGS RGS			
(a) State the time during which the object is travelling with terminal ve	locity.		[1]
 (b) Another object B falls from a height of 15.0 m and experiences the object A. Draw on Fig. 21.1 to show how the height of B varies with (c) Object C falls from a tall building. Fig. 21.2 shows how the speed it reaches the ground. 	n time.	S PGS	[1] until
speed / m s ⁻¹ RGS RGS RGS RGS RGS	S RG		
20.0			
tGS RGS RGS RGS 15.0	S RG		
	S RG		
5.0	time / s		
RGS RGS RGS RGS 0	time / s		
5.0 0 0 0 0.5 1.0 1.5 2.0 2.5 3.0 Fig. 21.2	time / s		
5.0 0 0 0 0.5 1.0 1.5 2.0 2.5 3.0 Fig. 21.2	time / s		RGS RGS RGS RGS [2]
5.0 0 0 0 0 0.5 1.0 1.5 2.0 2.5 3.0 Fig. 21.2 Calculate the distance travelled in the last 0.5 s of its motion.	time / s		
5.0 0 0 0 0.5 1.0 1.5 2.0 2.5 $3.0Fig. 21.2Calculate the distance travelled in the last 0.5 s of its motion.$	time / s		RGS RGS RGS [2]
$5.0 \qquad 5.0 \qquad 0 \qquad 0.5 \qquad 1.0 \qquad 1.5 \qquad 2.0 \qquad 2.5 \qquad 3.0 \qquad Fig. 21.2$ Calculate the distance travelled in the last 0.5 s of its motion.	time / s		RGS RGS RGS [2] RGS

RGS F	Raffles Girls	s' School (Secondary	RGS					End-of-`	Year Asses	sment
RGS (•	rmine the of its jou	•	f the build	ing assum	ing objec	ct C trave	lled a dist	tance of 3	35 m in th	e first [2]
	RGS	RGS	RGS								RG
GS (e) Calc	ulate the a	accelerati	on of the	object for t	he first 0:	.3 s of its	motion.			[2]
GS (f) Draw	v on Fig.	21.2 to s	show how	the spee	d of obje	ect C will	vary with	n time if i	ts accele	ration
	rema	ained cons	stant from	10.3 s onv	vards.						[1] RG
GS	RGS	RGS	RGS	RGS	RGS 9	RGS	RGS	RGS	RGS	[Turn O	ver

<u> </u>	Raffles Girl	ls' School ((Secondary	() ()	RGS	RGS	RGS	RGS	End-of-	ear Asses/	sment
GS 2		•		•	a ship of n wo tugboa		•	wards she	ore. Fig. 2	22.1 show	s the
	RGS	:S F1 anu .	r ₂ exerted	a by the t		its respec	livery.				
							▼ F ₁ =	150 000	NRGS		
			RGS	RGSS	hip		o (RGS	► NGS	
						RG	<i>F</i> ₂ = 200	000 N			
					RGS Fig	g. 22.1					
is (a		/ a scale		to deter	rmine the	magnitu	de of the	resultan	t force e	exerted by	y the [4]
	RGS	RGS	RGS								RGS

RGS

RGS

RGS

RGS 10 RGS

RGS

RGS

RGS	Rafi	fles Gir	ls' School (S	Secondary	RGS)	RGS	RGS	RGS	RGS	End-of-Y	ear Asse	ssment
	(b)		e whether ction of the						ease or	remain the	e same	if the [1]
		RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RG
	(c)		sistive forc ction of the									posite [3]
	23		shown in F n from A to					a rate of	82 W wh	en he runs RGS	along a	a level
			RGS	4	5 m							
			2.5 m	RGS						×		
			RGS	RGS	RGB	RGS	RGS	RGS	RGS	RGA		
						Fi	g. 23.1					
	(a)	Dete	ermine the	force he	applies wh	en runni	ng at this	uniform v	elocity.			[2]
	(b)		man now i n and it rise							s ⁻¹ . The sl	ope mea	asures
									RGS		RGS	
		(i)			•	•		•	•••	as he reach		[2]
RGS		RGS	RGS	RGS	RGS	RGS1	1 RGS	RGS	RGS	RGS	[Turn C	Over

Raffles Gir	ls' School	(Secondar	RGS	RGS	RGS	RGS	RGS	End-of-\	/ear Asses	ssment
(ii)	If the fric from B to		e slope is	25 N, calc	ulate the	work he de	oes to ove	ercome frie	ction in ru	-
	RGS	RGS								[2]
R (iii)	Determi	ne the tim	e he take	s to run u	p the slop	e.RGS				[2]
(iv)	Calculat	e the ave	rage powe	er of the n	nan in run	ning from	B to C.			[2]
	etre rule vn in Fig 2		spended	from the	ceiling u	using two	cables	at points	X and	Y as
								ceiling		
	RGS	RGS	RGS	ables _	RGS	RGS	RGS	RGS		
	RGS	15.0 cm	RGS		RGS	30.0	cm ^{GS}			
	RGS	RGSX	RGS	RGS	RGY	RGS	m	etre rule		
	uniform m	etre rule	has a ma		g. 24.1 a					
					DCC	g on the r	netre rule	RGS		[1] ^{GS}
(b) State	e the <i>princ</i>	ciple of mo	oments.							[2]35
RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS
RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS
RGS	RGS	RGS	RGS	RGS	12RGS	RGS	RGS	RGS	RGS	RGS

RGS <u>F</u>	Raffles Girl	s' School (Secondary	RGS	RGS	RGS	RGS	RGS	End-of-	Year Asses	ssment
RGS (c) Calc	ulate the	moment c	lue to the	metre rul	e's weight	about Y.				[2]
RGS	d) Hend	ce or othe	rwise, de	termine							
	(i)	the force	e exerted	by the cal	ole at X, a	IndRGS					[2]
	(ii)	the force	e exerted	by the cal	ole at Y.						[2]
RGS (magnitud	de of the f	orce at X	changes	when the	cable at	Y is mov	ved toward	ls the
	right	RGS									[1]
	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS
RGS	RGS	RGS	RGS	RGS	RGS 1	3 RGS	RGS	RGS	RGS	[Turn O	ver

RGS	Raffles Girl	s' School	(Secondar	RGS y)	RGS	RGS	RGS	RGS	End-of-	/ear Asses	ssment
RGS 2					girl holds t						
					every five sight of 0.9				gin win is	3.0 m ar	
	RGS	200	RGS	RCS	К	PGS	BGS	BGS	PGS	RGS	
	0.98 m	RGS	Res	RG	RGS	RGS		R	RGS	RGS	
	RGS	RGS	Ags	R/S	RGS	RGS	GS	RGS	RGS	NRGS	
	RGS	RGS		Joes.	RGS	$\mathbf{\lambda}$	RGS	RGS		RGS	
RGS	RGS	RGS		RGS	KGS	j. 25.1	RGS				RGS
RGS	a) Expla	ain why th	ne rope w	ave in Fig	. 25.1 is k	nown as	a transver	se wave.	RGS	RGS	[1] RGS
	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS
RGS (b) Nam	e one oth	ner examp	le of a tra	nsverse w	ave.					RGS [1]
RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS
RGS	c) State	e the amp	olitude and	d waveleng	gth of the	rope wav	RGS e.				[2]
	ampl	itude:	RGS	RGS	RGS	RGS					
	wave	elength:	RGS	RGS	RGS	RGS					
RGS (d) Dete	rmine the	e frequenc	cy of the ro	ope wave.						[1]65
RGS (e) Calc	ulate the	speed of	the rope w	vave.						[2]
RGS	RGS	RGS	RGS	RGS	RGS 1	4RGS	RGS	RGS	RGS	RGS	RGS

SS F	Raffles Gi	rls' School (Secondary	RGS					End-of-	ear Asses	ssment
3S (1		e rope wav				RGS	RGS	RGS	RGS	RGS	RG
	Sta	te the dired	ction of m	otion of pa	article K a	t this insta	ant. RGS				[1]
	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RG
3S (9	g) Su	ggest one v	way to cha	ange the s	peed of t	he rope w	ave.				[1] RG
	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RG
35 (I	h) Ske	etch on Fig	. 25.1 and	other wave	e that has	twice the	waveleng	th and ha	alf the am	plitude.	[2] RG
2	6 Mic	rowaves tr	avel in va	cuum with	n a freque	ncy of 1.5	5 x 10 ⁸ Hz	RGS			
-		crowaves tr						RGS RGS			
-											[2]
	a) Cal	culate the	time it tak	es for mic	rowaves	to travel 2	25000 km.	RGS			[2] RG
35 (4 35 35	a) Cal	culate the	time it tak	es for mic	rowaves RGS	to travel 2	25000 km. RGS	RGS RGS			[2] RG RG
	a) Cal	culate the RGS RGS	time it tak RGS RGS	es for mic RGS RGS	RGS RGS	to travel 2 RGS RGS	25000 km. RGS RGS	RGS RGS RGS			[2] RG RG
35 (4 35 35 35 35	a) Cal RGS RGS RGS RGS	culate the RGS RGS	time it tak RGS RGS RGS RGS	es for mic RGS RGS RGS RGS	RGS RGS RGS RGS	to travel 2 RGS RGS RGS RGS	25000 km. RGS RGS RGS RGS	RGS RGS RGS RGS			RG [2] RG RG RG

		infra- ray		RGS	RGS	ultra-violet rays	RGS	RGS	gar	mma rays	RG
		RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS
					incre	easing frequ	ency			RGS	
RGS	RGS	RGS	RGS	RGS	RGS	15 RGS	RGS	RGS	RGS	[Turn O	ver 🕞

RGS	Raffles Girl	ls' School	(Secondar	RGS y)	RGS	RGS	RGS	RGS	End-of-\	lear Asses	ssment
RGS 2	7 Light	is incide	nt on a ree	ctangular	transpare	nt block as	s shown i	n Fig 27.1	RGS		
			RGS								
			RGS	40°	RGS	RGS	RGS	RGS			
			RG <u>S</u>	×	RGS	RGS		RGS			
				RG 7	°0°	RGSY		RGS			
				RGS	RGS Fiç	g. 27.1	RGS	RGS			
RGS (a) State	e the angl	e of incide	ence and	refraction	at X.					[1]65
	NG5				RGS	RGS					
	angle	e of refrac	ction =	RGS	RGS	RGS					
RGS (b) Calc	ulate the	refractive	index of t	he transpa	arent block	^{(.} RGS				[2]
RGS (c) Defir	ne <i>critical</i>	angle.								[1]33
	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS
	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS	RGS
RGS	d) Calc	ulate the	critical an	gle of the	transpare	nt block.					[2]
RGS	e) Hend	ce, compl	ete the pa	ath of the l	light ray fro	om Y until	it leaves	the block.			[2]
					RGS End	of Paper					
					RGS	RGS					
RGS	RGS	RGS	RGS	RGS	RGS 1	6RGS	RGS	RGS	RGS	RGS	RGS