6.	(a)	Compare the reaction of the following metals with dilute sulphuric acid:	
		(i) Aluminium (2 marks))
		(ii) Iron (2 marks))
		(iii) Copper (1 mark)	J
	(b)	Suggest TWO precautions that should be taken when carrying out the reaction of aluminium with sulphuric acid. Give a reason for EACH precaution. (4 marks)	
	(c)	Why is it dangerous to react sodium and potassium with dilute sulphuic acid? (2 marks)	ı
	(d)	The Smith family moved into a new house which is very close to the beach. The contractor advised that in order to protect the iron windows, Mr Smith should paint them as soon as possible. Why did the contractor give this advice to the Smith family? (4 marks)	r S
Write	your ans	swer to Question 6 here.	
(e)	<u>a.</u>	Aluminium -> there would be frizzing in	
. the		ube the temperature may raise. Vigounus	
reac	tions	will take place. Hydrogen gas will be	
yrod afte	r p	If the metal had exide, it will be removed placing with Sulphune acid- and the aluminium we about	U.
i)	Pror	n - a slight reaction will take place:	
There	<u>'</u> ω	i i i i i i i i i i i i i i i i i i i	
Нил	lago	oill he slight frizzing. A small amounts of	
111	i ga	gas will be produced. If the Iron	
was	<u> </u>	noted, the metal will be shing.	
ìii)_C	opper- There will be no reaction. taken	
-	place	. Since copper is the lowest in the	
	rea co	try series & the least reactive metal.	
· · · · · · · · · · · · · · · · · · ·			

b), Ensure	that the Alumia	rium and Si	در مامیری م	1-
not touc	that the Alumin	non and an	and a This	OLD
Venu st	th any part	IC :t touches	20ay - 111y	18 G
D' 111100 0	ong reaction. D	+ 11 Truches	boay cell	4 45
-11///MC3, (2	nd parts they	can becom	ie damagi	<u>rd·</u>
i) Place the	, test tube	away the	face when	holding_
The fume	e given out	from this	reaction	May
be toxic	and when	inhaled	may be d	angenus
to the	body.		J :	0
-	<u> </u>			
c) Dodium	and Potassium	are high	h tip in	the
<u>reactivity</u>	Series · Ar Suc	h they a	re very re	active.
Reacting	them with	Sulphunic Aci	d may	be
very da	ngerous and e	explosive; it	t may ce	<u>use</u>
<u>damages</u>	to body part	a etc. As	Such the	two
metab a	phould not be	reacted	with the	aci'd ·
d). If t	hey do not	paint the	windows, +	it.
will Rus	T. Iron, when	reacted	with water	OXYGEN
urll form	Oxidize	and for	m a lay	UU 95
flaky, rea	-brown Colour,	Called nust:	Since the	Smith
family ho	ve their hou	se by the	beactroide.	the
Iron Wine	tows will ne	st faster	because J	he

salt in the beach water well act as a catalyot. As such, rapid reachoms will to take place faster. To prevent noting, the contractor asked the Smith family to paint the windows as soon as possible. This post layer of paint will act as a protective layer for the 110n. As such the water and catalyot (sea soit-wate will not come readily into contact with the 110n window. As such, nusting will not take place:	9- 1L		LP.	1. 1							
To prevent noting, the contractor asked the Smith family to paint the windows as soon as possible. This point layer of paint will act as a protective layer for the non. (oxygen) As such the water and catalyst (sea soit-wate will not come readily into contact with the non window. As such, moting will not take	Dair	<u> </u>	The	beach	water	url	<u>ac</u>	<u>.</u>	as	<u>q</u>	······································
To prevent noting, the contractor asked the Smith family to paint the windows as soon as possible. This point layer of paint will act as a protective layer for the non. (oxygen) As such the water and catalyst (sea soit-wate will not come readily into contact with the non window. As such, moting will not take	<u>catal</u>	yot:	<u>As</u>	such,	rapid	react	ims_	wi	11 3	DH.	*
the anily to paint the windows as soon as possible. This paint layer of paint will act, as a protective layer for the iron. As such the water and catalyst (sea sait-wate will not come readily into contact with the iron window. As such, nisting will not take	take	p.l.	lace	faster.		****					
the anily to paint the windows as soon as possible. This paint layer of paint will act, as a protective layer for the iron. As such the water and catalyst (sea sait-water will not come readily into contact with the iron window. As such, nisting will not take	***************************************	To	P	revent	noting	, the	Cor	rtracti)r	askea	
act, as a protective layer for the non. As such the water and catalyst (sea soit-wote will not come readily into contact with the ron window. As such, rising will not take	the_	Smi	Њ	family		paint	the	WI	ndow	ρ. σ	ls
As such the water and catalyst (sea soit-water will not come readily into contact with the iron window. As such, nisting will not take	_000n	<u> 060</u>	possi	ble. J	his ##	int la	uer	(D	paint		00
from window. As such, noting will not take	act,	વડ	<u> </u>	ont	ective.	laviec -	For	the o	1	<u> </u>	<u> </u>
from window. As such, noting will not take	As	Such	th.	e n	(oxygen)	and	Cotal	L	(240	<u> </u>	
from Window. Hs Such, nisting will not take	<u>will</u>	not	ره	me	readily	in to	and	9 <u>1 (</u> - 1	SIG	Salt-	watei .D
place:	iron	Win	daw.	<u>Nr</u>	Such	1	COTH	act_	<u> </u>	#h :	the.
	place		<i></i>		<u>vuch</u>	nionr	ig u	<u> </u>	not.	tak	<u>e</u>
	- jour		· · · · · · · · · · · · · · · · · · ·								
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Integrated Science

Paper 02 – June 2011

Comments

Question 6: Exemplar 1

- Part (a) This candidate was awarded full marks for this part because the candidate used appropriate scientific language to correctly compare the reaction of the three metals with dilute sulphuric acid.
- Part (b) This candidate was awarded full marks for this part because the candidate suggested suitable precautions for the activity and gave appropriate reasons.
- Part (c) This candidate was awarded full marks for this part because the candidate provided a clear and detailed response to explain the danger of the reactions.
- Part (d) This candidate was awarded full marks for this part because the candidate provided a comprehensive, clear and detailed response using appropriate scientific terms. The candidate demonstrated the ability to use the knowledge of rusting, its causes and methods of prevention to adequately explain why the contractor would have given the advice.