大	15ce	כעים
men of	MARKING GUIDE FOR 545/3 CHEMISTRY 2020	
STION	MARKS AWARDED FOR	MAG
	As in the second of the second	
00°		100
1.	Volume of pipette used 20.0 cm3 x	1/2
	Final burette reading (cm3), 14.50 14.60 24.60	
	Initial burette reading (cm3) 0,00 0,00 1460	7
	Volume of BA1 used (cm3) 14.50 1460 14,40	
	· · · · · · · · · · · · · · · · · · ·	
		-
		-
		-
	(a) (i) Volumes of BA1 used to calculate the average	
1y = 1	14.50, 14.60, 14.40 cm3 X	1
		-
	(ii) Average volume of BA1 used	
r-a _s .	14.50 + 14.60 + 14.40	
	3	-
	3	
	3 /	2
	= 14.50 cm ³ /x	1 2
The state of the	그래요 아이들은 바이에 많은 이 그리고 있는데 그리고 있는데 그는데 그를 내려왔다는데 그리고 있다면 그리고 있다.	

LUESTION	MARKS AWARDED FOR
1	(b) Cist culate the
	(i) number of moles of hydrachloric acid that reacted
	1000 cm3 of the agid contain 0.1 moles
	14.50 cm3 of the acid contain 0.1×14.50 moles
	1000
	= 1.45 × 10-8 moles
	*.
	(ii) number of moles of potassium hydrogencarbonate that
	reacted with the hydrochloric acid
	Since I male of the acid reacts with I male of the hydrogen.
	carbonate / me nyangen
	Moles of the hydrogen carbonated reacted = 1.45×10 moles
	1 January Colored - 1 47 VID Moles
	(iii) concentration of potassium hydrogencarbonate in moles per
	dm3 in BA2
	20.0 cm3 of BAZ contain 1.45×10-3 moles of the hydrogen car borate
-	1 dm3 (1000cm3) will contain 1.45×10-3×1000 moles
	20.0
	= 0.0725M ✓
	1

CS CamScanner

		<u>, </u>
	Subject	
		, ,
		45 40
	(c) Defermine the percentage purity of potassium hydrogencarbonate	
	1mole of KHCO3 weighs 39+1+12+(3×16)9	
	= 1009	
	-: 0.0725 moles of KHCO3 weigh 0.0725 x 100g	
61 100 100 100	= 7·25g	
	• :	6
:		
	Percentage purity of the KHCO3 = 7.25 × 100%	
	10.0	
	= 72·5°/ ₀	
		25

-		
	•	
Name of Street, or other Party of Street, or		
	W ** ** ** ** ** ** ** ** ** ** ** ** **	

4		ANDED FUK		
M	MAR	KIS AWARDED FUR	BEDUCTIONS	-
٦		ODSEDVATIONS	CO2~X englued	,
	COLL T C	Colowless gas evolved which turned	· 00 ²	
(A) =	(a) Heat T	blue litmus paper redux and lime water	*» W3	
	 	alde Minima La		
		milky X		
	-	" X topic look	ZnOxformed Znoxformed	
to h		The residue was yellow when hot	· 7.2+X	
-		and white X when cold	" (LV)	
	3	- Variable of		
===	(b) Add HNOgk	Effernescence/Colonviess gas evolved	CO, X evolved	
		which turned blue litmus paper redu		
		and lime water milky	: CO3 COHEIRMED	
		A colourless solution formed.		
	Add Na Othrag	White ppt-X insoluble x in excess	Ca ^{2t} , Mg ^{2t}	
7		NaOH	suspected.	
110,000				
- 3-				
ter Seesa	P'IL-	1.11.1		
	Filter	White residue	. 24	
		Colouvless filtrate	Al3+, Pb2+, Zx2+	, ·
7				
				(-
	the state of the s	•		
		The same of the sa	†	
-	 	14		
1		<i></i>	· · · · · · · · · · · · · · · · · · ·	

		EOD 245/3 CHE	MISTRY 2020	-
\$05	MAR	KS AWARDED FOR		•
	TESTS	OBSERVATIONS	DEDUCTIONS	MARI
2	(c) Add HNO.	(a) A white ppt & dissolved to give	2.2. 3.6/10/103.	200
		a colourless solution	A13+ P62+ Zn2+	
			# that we have to	2
	-			-
	WAdd NaOH	(4) White ppt × soluble in excess	Amphoteric	4 8 1
		sodium by droxide solution.	hydroxide forme	
+			A13+ P12+ Zn2+	2/2
			<i>y y y</i> .	
-				
	5 A V L 1/1 .			
(u) Add Kilag)	No apparent change	Pb2+ absent .: A13+ Zn2+	
	· .		: A13+, Zn2+	1 2
	* .		suspected	2
(iii)) Test of own	,		
	choice			
Aa		A LIF LX X		
2100	at lall	A white ppt x soluble x in excess	Zn(OH), formed followed by	
1	il in excess	aqueous ammonia	followed by	27
ust	11 W excess		[Zn(NH3)4]2+	
			Zn2+ CONFIRMED	
1				
+		2755		

MARKS AWARDED F		MARK
TESTS OBSERVATIONS		
(d) Wash residue , Riesidue dissolved in the acid to a		
Dissolve in colourless solution X	Ca and Mg2+	X 1
HNO3 (aq)		
i) Add NaOthcap White ppt x insoluble in excess	Calt or Mg2t	\ <u></u>
sodium hydroxide		5
		-
L'S A LV		
(ii) Add NHzag No observable change	CO24 X CONFIRMED	-
	2.0	1
·		
(e) (i) The cations in I are Zn2+ X		
Ca2+ X	•	1/2
	*	1/2
(ii) The anion in T is $CO_q^2 - X$		
9		
	•	25
		/