

T.I. MATRICULATION HIGHER SECONDARY SCHOOL, AMBATTUR
Half Yearly Examination - 2018

MARKS:30

ROLL NO :

TIME :

I) Choose the correct answer: 6X1=6

1. The colour of chromic oxide is ----- (**Green** / Yellow)
2. The chemical name of slaked lime is ----- (**Calcium hydroxide** / Calcium oxide)
3. The acid present in tomato is ----- (**oxalic acid**/ tartaric acid)
4. Actinides are known as ----- elements (**inner transition** / transition)
5. The Chemical properties of all elements in a group ----- (**are similar** / vary regularly)
6. The first group of elements in the periodic table is ----- (**alkali metals** / alkaline earth metals)

II) Answer the following : 7 X 2 = 14

7. Give an example for a) acidic salt b) basic salt c) normal salt d) double salt

(4 X ½ m=2)

8. Why does the colour of copper sulphate change when an iron nail is kept in it? Justify your answer.

(iron more reactive than copper (½ m) displaces copper from its solution (½ m) . More reactive metal displaces a less reactive metal from its solution (½ m).

So colour changes from blue to green(½ m)

9. Magnesium ribbon reacts faster in HCl than in acetic acid. Give reason

Hcl is a strong acid (1m) acetic acid is a weak acid (½ m) . reaction is faster in strong acid than weak acid (½ m)

10. Complete the table:

	Colour in Acidic medium	Colour in Basic medium
Phenolphthalein	colourless	Pink
Methyl orange	Pink	Yellow

11. What are inner transition elements? Explain its position in the periodic table

4f lanthanide elements and 5f actinide elements are called inner transition elements (1m)

Placed at the bottom of the periodic table (1m)

12. State modern period law (**the physical and chemical properties of elements are periodic function of their atomic number – 2m**)

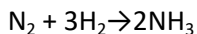
13. Compare the atomic radius of Na (Z = 11) and K (Z=19)

K has larger atomic radius than Na (2m) K=2,8,8,1 Na-2,8,1

III Answer the following:

5 X 2 = 10

14. What is the rate of the following reaction:



Rate = $-\text{d}[\text{N}_2] / \text{dt}$ or $-1/3 \text{d}[\text{H}_2]/\text{dt}$ or $1/2 \text{d}[\text{NH}_3]/\text{dt}$ (all three expression-2m , only one expression – 1m , 2 expression-1 1/2 m)

15. Write the rate of the following reaction : $2\text{A} + 3\text{B} \rightarrow 2\text{C} + \text{D}$

Rate = $-1/2 \text{d}[\text{A}] / \text{dt}$ or $-1/3 \text{d}[\text{B}]/\text{dt}$ or $1/2 \text{d}[\text{C}]/\text{dt}$ or $\text{d}[\text{D}]/\text{dt}$ (4 x 1/2 m=2m)

16. Find the pH of the solution whose hydroxyl ion concentration is 2×10^{-3}

(log 2=0.3010 and log 3=0.4771)

pOH = - log of $[\text{OH}^-]$ (1/2 m) ; - log of 2×10^{-3} (1/2 m) ; $3 - \log 2$; $3 - 0.3010 = 2.699$ (1/2 m); **pH = 14 - pOH**

14 - 2.699 = 11.301 (1/2 m)

17. Pick out the elements that belong to the same group:

Element	Atomic number
A	4
B	11
C	3
D	6
E	9
F	14
G	17
H	20

A and H ; B and C ; D and F; E and G (4 x 1/2 m = 2m)

18. Arrange the following elements in the increasing order of atomic radii:

Element	Atomic number
A	3
B	10
C	9
D	7

B,C,D,A (4 X 1/2 m = 2m)

