

Model Question of SSC Examination 2021 for All Board

Chemistry

Subject Code

1	3	7
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Time — 2 hours 35 minutes

Creative Essay Type Questions

Full marks — 50

[N.B. -The figures in the right margin indicate full marks. Read the stems attentively and answer any five of the following questions.]

1. ★ Observe the following reaction—



- a. State Le Chalelier principle. 1
- b. What do you mean by isomerization reaction? 2
- c. Mention the differences between ii & iii reaction. 3
- d. Explain that oxidation and reduction reaction happen simultaneously in reaction i. 4

2. ► A is a compound composed of carbon and hydrogen. In this compound percentage composition of hydrogen is 7.69%. the molecular mass is 26.

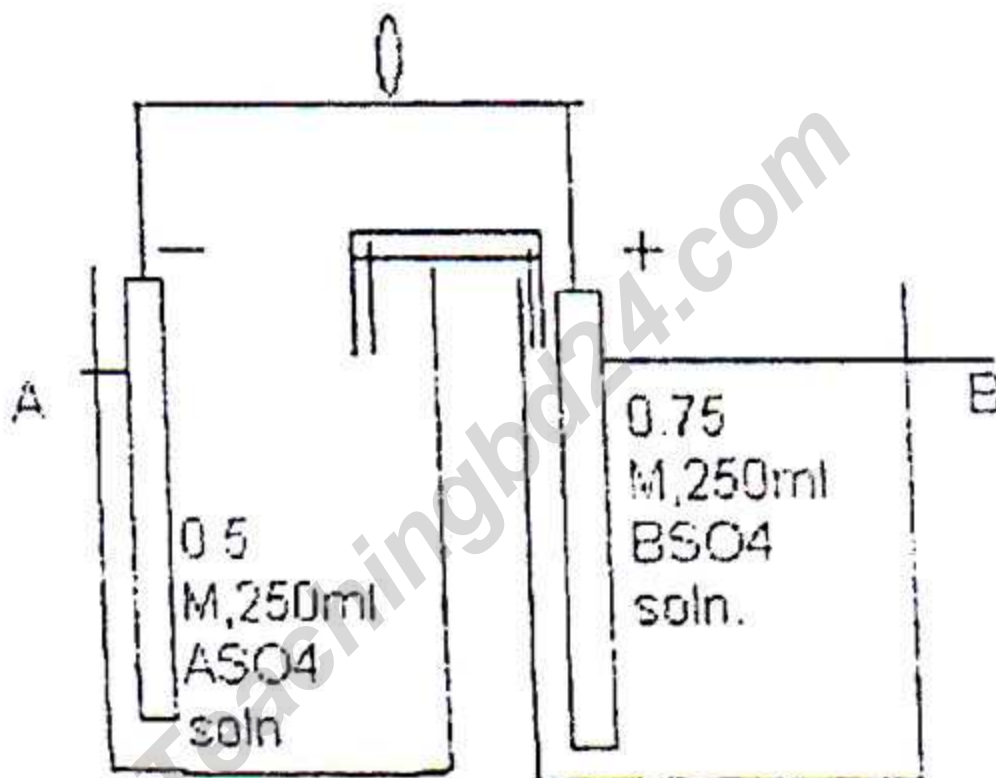
- a. What is molar volume? 1
- b. Why is He an inert gas? 2
- c. Determine the molecular formula of "A" compound. 3
- d. Is it possible to prepare Vinegar from A compound. Analyze with chemical reactions. 4

3. ► Compound A & B are two isomers of $\text{C}_2\text{H}_6\text{O}$.

- a. What is saponification? 1
- b. Why NH_3 is basic? 2

- c. Write down the name & properties both of A & B compound. 3
- d. Between A & B Isomers, which one is suitable to produce ethane. Explain with reaction. 4

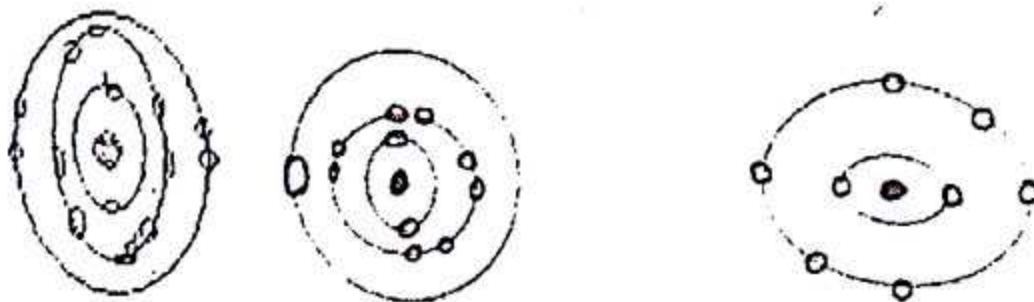
4. ★



Atomic number of A & B atoms are 30 & 29 respectively.

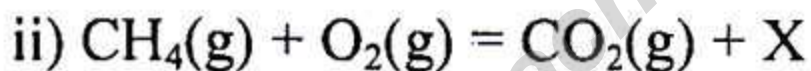
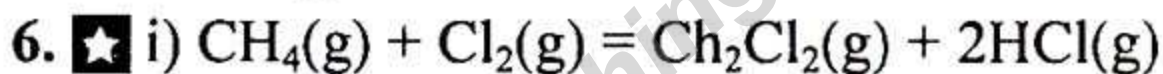
- a. What is salt bridge? 1
- b. Write down the electronic configuration of B element. 2
- c. Calculate how many grams of ASO₄ salt is dissolved in anode. 3
- d. Is it possible to produce electricity using the above figure? Analyze. 4

5. ►



[Where, A B & D are not the real symbol of element]

- What is pH? 1
- Why CaCl_2 conduct electricity ? Explain 2
- Discusses the bond forming process of DB_2 compound with diagram? 3
- Discusses the hand forming process of BD , Compound with diagram? 4



Bond energy of $\text{C}-\text{H}$, $\text{Cl}-\text{Cl}$, $\text{C}-\text{Cl}$ & $\text{H}-\text{Cl}$ are 414, 326, & 431 KJmol^{-1} respectively.

- What is called alloy? 1
- Explain that H_2SO_4 acts both as oxidant and dehydrating agent. 2
- Determine the value of ΔH in (i) reaction. 3
- Is it possible to electrolysis of X compound in acidic condition? Analyze. 4

7. ► Look at the table and answer the questions:

Symbol	compound
${}_6X$	
${}_{15}Y$	XZ_4, YZ_3, Z_2
${}_{17}Z$	

[Here, X, Y & Z are the imaginary symbol of three elements]

- What is Tollen reagent? 1
- Why Br_2 is called Halogen? 2
- Which of the above compound will show maximum diffusion rate and why? 3
- Though bond nature of XZ_4 and YZ_3 is same but their structural formula and bond angle are different. Justify. 4

8. ► Calamine, Hemattite & Brine are the ores of A, B & D elements.

- What is radical? 1
- Why sulphur shows variable valence? Explain. 2
- Discuss the extraction process of B element from given ore. 3
- Among the ores of A, B & D elements one element is extracted by electrolysis process. Analaye. 4

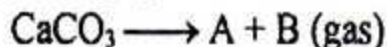
Time — 25 minutes

Creative Multiple Choice Questions

[NB. Answer all the questions. Each question carries one mark. Block fully, with a ball point pen, the circle of the letter that stands for the correct/best answer in the "Answer Sheet" for the Multiple Choice Questions Examination.]

- Which metal is rare in nature?
 - Cu
 - Pb
 - Zn
 - Au
- ★ Which one will follow the exceptional electronic configuration?
 - Sc
 - Cr
 - Mn
 - Zn

Look at the following reaction and answer the questions 3 & 4.



- What amount of A produce if we heat 65g reactant?
 - 36.4
 - 37
 - 37.4
 - 38
- What is the nature of B gas—
 - acidic
 - basic
 - neutral
 - salt
- Tollent's reagent is used for identifying—
 - Methanol
 - Methanal
 - Ethanal
 - Ethanol
- In order to produce ammonia in lab—
 - ammonium chloride
 - Calcium hydroxide
 - Calcium oxide

Which one of the following is correct?

- i & ii
 - ii & iii
 - i & iii
 - i, ii & iii
- ★ Brass is composed of—
 - iron and carbon
 - cooper and tin
 - copper and led
 - copper and zinc
 - C_6H_6 —
 - coplanar cyclic

- alternate double bonded
- aromatic

Which one of the following is correct?

- i & ii
 - ii & iii
 - i & iii
 - i, ii & iii
- What is the shape of ammonia?
 - tereahedral
 - Linear
 - pyramidal
 - octahedral
 - What is the oxidation number of Cr in KCr_2O_7 ?
 - +2
 - +4
 - +6
 - +8

Answer questions no. 11 and 12 from the following stem :

metal	atomic number
Mg	—
X	20
Sr	—

- The elements X—
 - forms Ionic bond
 - has found in hard water
 - can form super oxide-

Which one of the following is correct?

 - i & ii
 - ii & iii
 - i & iii
 - i, ii & iii
- In flame test, which color will be given by X?
 - brick red
 - violet
 - golden
 - red
- What is the required of pH to digest protein in the stomach?
 - 2.0
 - 4.6
 - 5.5
 - 7.0

14. **★** Which one of the following is coinage metal—
 (a) Au (b) Hg
 (c) Na (d) Zn
15. $\text{NaOH} + \text{CO}_2 \longrightarrow \text{P}$, Product—
 i. is washing soda
 ii. is a salt
 iii. the nature of the aqueous solution is basic
 Which one of the following is correct?
 (a) i & ii (b) ii & iii
 (c) i & iii (d) i, ii & iii
16. Which compound has same empirical and molecular formula?
 (a) Hydrogen peroxide
 (b) Benzene
 (c) Ammonia (d) Ethylene
17. **★** What does it mean by ETP in industry?
 (a) Emergency treatment plant
 (b) Effluent treatment plant
 (c) Environmental treatment plant
 (d) Establishing treatment plant
18. What is the colour of the precipitation of $\text{Al}(\text{OH})_3$?
 (a) White (b) Raddish brown
 (c) Light blue (d) Greenish
19. Which one of the following act as Cathod in dry cell?
 (a) Zn rod (b) MnO_2
 (c) Carbon rod (d) NH_4
20. What is the Oxidation number of Oxygen in K_2O_2 ?

- (a) -2 (b) -1
 (c) -4 (d) -3

21. In the electrolysis of NaCl—
 i. Hydrogen is produced at cathode
 ii. Chlorine gas is produced at anode
 iii. Na is found at cathode

Which one of the following is correct?

- (a) i & ii (b) ii & iii
 (c) ii & iii (d) i, ii & iii

Read the following stem carefully and answer the question 22 to 23

HCl	KOH
500 ml	500 ml
0.5M	0.1M
Pot A	Pot B

22. How much HCl is required to prepare the stem solution in pot-A?
 (a) 9.125g (b) 24.4g
 (c) 24.5 (d) 26.5g
23. What reaction will happen if we mix two pots?
 (a) addition (b) oxidation
 (c) non redox (d) hydration
24. **★** $2\text{FeCl}_2 + \text{Cl}_2 \longrightarrow \text{FeCl}_3$
 Above reaction is—
 i. Addition ii. redox
 iii. Non redox
 Which one of the following is correct?
 (a) i & ii (b) i & iii
 (c) ii & iii (d) i, ii & iii
25. Valency of phosphate radical is—
 (a) 1 (b) 2
 (c) 3 (d) 5

Ans.

1	(d)	2	(b)	3	(a)	4	(a)	5	(d)	6	(d)	7	(d)	8	(d)	9	(c)	10	(c)	11	(a)	12	(d)	13	(a)
14	(a)	15	(d)	16	(c)	17	(b)	18	(a)	19	(c)	20	(b)	21	(a)	22	(a)	23	(c)	24	(a)	25	(c)		