

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. ► (i) NH_3 (ii) SO_2
- a. What is rust? 1
- b. Why mango become yellow when ripe? 2
- c. Determine the total number of molecules that is present in 400 ml of the gas given in no. (i) of the stem at standard condition. 3
- d. Between the gas (i) and (ii) which has the greater rate of diffusion? Explain mathematically. 4

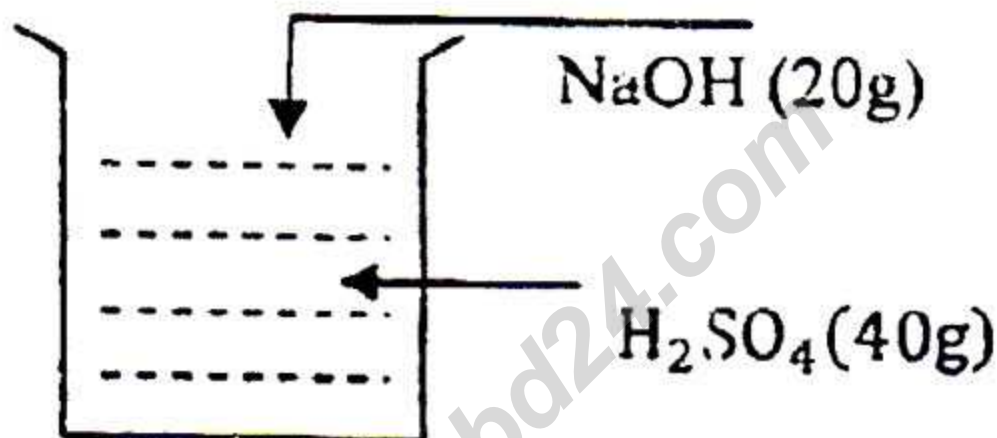
2. ★

Element	X	Y
Atomic number	20	9

- a. Define atomic mass. 1
- b. Write the differences between empirical formula and molecular formula. 2
- c. Explain the bond formation process between the two elements of the stem. 3
- d. Determine the position of the two elements in the periodic table? 4
3. ► (i) ${}_6\text{C}$ (ii) ${}_{12}\text{Mg}$ (iii) ${}_{17}\text{Cl}$
- a. Define molarity? 1
- b. H_2SO_4 is a dehydrating agent— explain. 2

- c. Arrange the elements of the stem according to their atomic size and explain with cause. 3
- d. Whether the compound formed by last two elements of the stem will dissolve in water or not? Justify your answer. 4

4. ★



- a. What is BOD? 1
- b. What is saponification? Explain. 2
- c. Which one is the limiting reagent in stem? Determine. 3
- d. How much salt will be produced by the reaction of the stem? Determine by calculation. 4
5. ► $\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \rightleftharpoons 2\text{NH}_3(\text{g})$
- a. What is weak acid? 1
- b. What is hydrolysis reaction? Explain. 2
- c. If the bond energies of $\text{N} \equiv \text{N}$, $\text{H}-\text{H}$ and $\text{N}-\text{H}$ are 946, 436 and 391 $\text{KJ} / \text{mol}^{-1}$ respectively, then find the value of ΔH of the reaction. 3

- d. Explain the effect of increment of temperature and pressure on the equilibrium of the reaction of the stem. 4

6. ►

Ore	Bauxite	Zinc Blende
Element	A	D

- a. What is rate of reaction? 1
- b. Why the aqueous solution of Na_2CO_3 is basic? 2
- c. Explain the condensation process of the ore of the element 'A' 3
- d. How the element 'D' is extracted from the ore. 4

7. ► The compound X and Y are alkane and alkene respectively. The carbon number of them are 2 and 3.

- a. What is formalin? 1
- b. What is decarboxylation reaction? Explain. 2
- c. The compound Y is an unsaturated hydrocarbon— Explain two tests to prove the statement. 3
- d. How carboxylic acid can be prepared from compound X? Write with equation. 4

8. ★ Na_2CO_3 [prepared from limestone, NH_3 and NaCl]

- a. What is condensation polymer? 1
- b. Why backelite is a thermo setting plastic? 2
- c. How the compound given in the stem is prepared? Write with equation. 3
- d. Determine the % composition of the compound of the stem. 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.]

1. What is the valency of iron in the mixed Oxide of iron?

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

2. What is the separated substance in 71-120°C temperature in fractional distillation process?

- (a) Gasoline (b) Naphtha
(c) Kerosene (d) Disel oil

3. Which is the monomer of Derilin?

- (a) Phenol
(b) Formaldehyde
(c) Ethene
(d) Ethanol

4. What is the amount of 2 litre 0.2 molar Calcium Hydrogen Carbonate solution?

- (a) 64.8g (b) 48.4g
(c) 84.6g (d) 46.8g

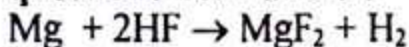
5. Which one is the unsaturated alicyclic compound?



6. What is the shape of the structural unit of graphiter's crystal?

- (a) Plain (b) Quadrilateral
(c) Hexagonal (d) Tetrahedral

Read the stem and answer the following questions no. 7 and 8 :



(30.5g) (70g)

7. Which amount will be left out in above reacten?

- (a) Mg 11.5 g (b) HF 11.5g
(c) Mg 19.17g (d) HF 19.17g

8. After using of certain amount of reactent how much gas will be got?

- (a) 1.27 (b) 3.5
(c) 2.54 (d) 3.0

9. If Chalcosite is heated in present of Oxygen which gas will be produced?

- (a) CO₂ (b) SO₃
(c) CO (d) SO₂

10. Which acid will be turned yellow on pH paper?


- (a) HCl (b) H₂SO₄
(c) HClO₄ (d) CH₃COOH

11. What is the Oxidation number of hydrogen in lithium Aluminium Hydride?

- (a) -2 (b) -1
(c) +1 (d) +2

Read the stem and answer the following questions no 12--14.

Electrom configuration of the otuer most shell of 'A' element is ns^2np^3 [n = 3]

12.  Which one has electron affinite more than 'A'?

- (a) Si (b) Cl
(c) O (d) N

13. Which acid is the compound of 'A'.

- (a) H₂SO₄ (b) HNO₃
(c) HClO₄ (d) H₃PO₄

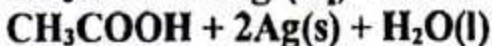
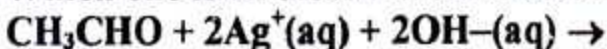
14. What is the number of atoms in 3g 'A'?

- (a) 5.82×10^{23} (b) 5.82×10^{22}
(c) 0.582×10^{24} (d) 582×10^{23}

15. 10 PPM—

- (a) 10 g solute in each litre
(b) 10mg solute in each litre
(c) 1g solute in 10 litres
(d) 1 mg solute in 10 litre

16. Which one is oxidised in this reaction?



- (a) CH_3CHO (b) CH_3COOH
(c) Ag^+ (d) OH^-

17. If the alkalinity of soil becomes too much which one will be applied to control?

- (a) $(\text{NH}_2)_2\text{CO}$ (b) $(\text{NH})_2\text{CO}_3$
(c) $(\text{NH}_4)_2\text{SO}_4$ (d) NH_4Cl

18. Zeolites are —

- i. Negative charged Boro Alumino is the compound of silicate
ii. it is a big lattice of silicon, Oxygen and aluminium atoms
iii. It is used to increase the speed of disintegration reaction.

Which one is correct?

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

19. $\text{Na}_2\text{SO}_4 + \text{Ba}(\text{NO}_3)_2 = \text{BaSO}_4 + 2\text{NaNO}_3$

— In this reaction —

- (a) BaSO_4 will be turned as sediment
(b) Ba^{+2} , SO_4^{-2} will remain spectator ion
(c) It will remain as ion in a product

(d) This reaction will be a synthesis reaction

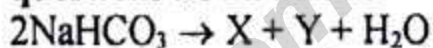
20. How many bond pair electrons are in Sulphur Trioxide molecule?

- (a) 3 (b) 4
(c) 5 (d) 6

21. How many electrons are there in Radon's 5th shell?

- (a) 2 (b) 8
(c) 18 (d) 32

Read the stem and answer the following questions no 22 and 23



22. How much 'X' compound is needed to make 500 ml semi molar solution?

- (a) 13.25 g (b) 26.5 g
(c) 6.5 g (d) 53g

23. What is the mass of 5.5 litre 'Y' compound in standard temperature and pressure?

- (a) 5.40g (b) 10.80g
(c) 21.60g (d) 15.20g

24. Which can be purified in the process of oil foam floating process?

- (a) Fe_2O_3
(b) ZnCO_3
(c) Al_2O_3
(d) PbS

25. What is the number of Neutrons of the carbon isotope which is used to find out the age of the earth?

- (a) 9 (b) 10
(c) 7 (d) 8

Ans.

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