

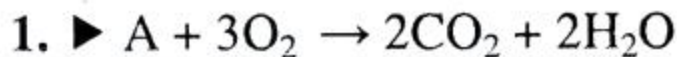
## Model Question of SSC Examination 2016

Sub: Chemistry (Creative)

Time: 2 Hours 10 minutes

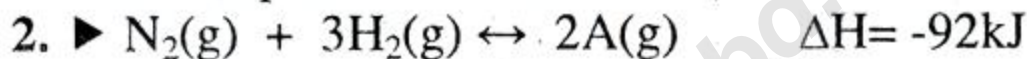
Total Marks-40

(Answer any four of the following Questions)



Here 'A' is an organic compound.

- a. What is  $\alpha$ -particle? 1
- b. At normal temperature  $CO_2$  is a gas but  $SiO_2$  is solid-  
Explain. 2
- c. Write the preparation of compound 'A' mentioning  
chemical reaction. 3
- d. Is it possible to prepare an organic acid from compound  
'A'? Explain it with reactions. 4



['A' is an inorganic compound]

- a. What is polarity? 1
- b. Mention the differences between nuclear fission and  
nuclear fusion reaction. 2
- c. Show that compound 'A' is a base. 3
- d. Can you prepare at least two fertilizers by using compound  
'A'? Describe it. 4

3. ► X is a kind of mineral of Aluminium and Y is a mineral of Zinc. Aluminium and zinc metals are extracted in two different ways.

- a. What is flux? 1
- b. What is frush process? Explain. 2
- c. Compare the reactivity of metals mentioned in the stem. 3
- d. Two metals are extracted in two different ways. Analyse it. 4

4. ► 0.25M 5mL solution of ferrous sulfate is mixed with 0.5M 10mL solution of sodium hydroxide in a beaker. A light green precipitate is appeared at the bottom of the beaker.

- What is Tollen's reagent? 1
- Explain the effect of temperature on the rate of a reaction. 2
- Calculate the amount of substances used in the reaction. 3
- What will happen, if 0.5M 5mL  $\text{FeSO}_4(\text{aq})$  is used instead of the solution mentioned in the stem. 4

5. ► You are given 0.2 M 700 mL  $\text{HClO}_4$  solution to carry out an experiment which require  $\text{HClO}_4$  solution of different concentration. To carry out the experiment you are told to separate 100 mL in a 200 mL beaker and to add 100 mL water.

- What is Diffusion? 1
- What is meant by radio activity? 2
- How will you make 0.1M solution from given solution? 3
- What number of molecule contain in 20 of 2<sup>nd</sup> solution which you made diluted. 4

6. ► pH is an important parameter in our daily life. We have to maintain pH value in every sphere of our life such as agriculture, cosmetics etc. We can control pH in many ways such as using fertilizer which usually occur by acid base reaction like  $\text{H}_2\text{SO}_4 + \text{CaO} = ?$

- What is pH? 1
- What is meant by relative atomic mass? 2
- What number of acid molecule will be neutralize after adding 0.5 Kg CaO according to above reaction. 3
- Describe the importance of pH considering above area mentioned above. 4



## Model Question of SSC Examination 2016

## Sub: Chemistry (MCQ)

Time: 35 minutes

Total Marks- 35

[Darken the circle (O) of the correct option from the following alternatives]

1. What is the main ingredient of toilet cleaner?  
(a)  $\text{CH}_3\text{COOH}$  (b)  $\text{NaOH}$   
(c)  $\text{NaHCO}_3$  (d)  $\text{H}_2\text{CO}_3$
2. Which one is correct according to energy?  
(a)  $4s > 3d > 3p$  (b)  $3s > 4d > 3d$   
(c)  $4f > 5p > 4p$  (d)  $3d > 4p > 4d$
3. Halogens —  
i. Belong to group 17  
ii. Are salt makers  
iii. Form halide ions  
Which one of the following is correct?  
(a) i & iii (b) i, ii & iii  
(c) ii (d) i, ii
4. Density of  $\text{CO}_2$  at STP?  
(a)  $1.96\text{g/cm}^3$  (b)  $1.96\text{g/dm}^3$   
(c)  $1.96\text{Kg/dm}^3$  (d)  $1.96\text{g/m}^3$
5. Which one is not alkali?  
(a)  $\text{Ca}(\text{OH})_2$  (b)  $\text{Zn}(\text{OH})_2$   
(c)  $\text{NaOH}$  (d)  $\text{KOH}$
6. Wood is mostly —  
(a) Protein (b) Starch  
(c) Cellulose (d) Wax
- Answer next two question on the basis of following stem
- | Isotope          | % of abundant |
|------------------|---------------|
| $^{235}\text{X}$ | 15            |
| $^{238}\text{X}$ | 85            |
7. What amount of  $^{235}\text{X}$  exist in 1000 of X atom?  
(a) 15 (b) 150  
(c) 50 (d) 85
8. What is the relative atomic mass of X?  
(a) 236.5 (b) 237.5  
(c) 237 (d) 237.3
- Answer next two question on the basis of following stem  
49g of  $\text{K}_2\text{CO}_3$  gives 20g of  $\text{K}_2\text{O}$  on heating.
9. What is the percentage of yield?  
(a) 5.9% (b) 8.5%  
(c) 69% (d) 59.92%
10. What will be the volume of  $\text{CO}_2$  at STP of  $\text{K}_2\text{CO}_3$  is 90% pure of 49 g?  
(a) 7.88mL (b)  $7.16\text{dm}^3$   
(c)  $7.88\text{m}^3$  (d)  $7.16\text{cm}^3$
11. How many lone pair electrons in the central atom of phosphine?  
(a) 2 (b) 0  
(c) 3 (d) 1
12. Acceptance level of arsenic in Bangladesh is —  
i.  $0.01\text{mg/L}$   
ii.  $0.01\text{mg/dm}^3$   
iii.  $0.01\text{mg/m}^3$   
Which one of the following is correct?  
(a) ii & iii (b) i, ii & iii  
(c) i & ii (d) i & iii
13. Calamine is —  
(a)  $\text{ZnCO}_3$  (b)  $\text{Fe}_3\text{O}_4$   
(c)  $\text{HgS}$  (d)  $\text{CaCO}_3$
14. Cycloalkanes are —  
i.  $\text{C}_6\text{H}_{12}$   
ii.  $\text{C}_4\text{H}_8$   
iii.  $\text{C}_6\text{H}_{14}$   
Which one of the following is correct?  
(a) i & iii (b) i, ii & iii  
(c) ii & iii (d) i & ii
15. Which of the following element is not halogen?  
(a) Fluorine (b) Bromine  
(c) Chlorine (d) Nitrogen
16. Which one is formed when  $^{238}\text{U}$  dissociates spontaneously?  
(a)  $^{206}\text{Pb}$  (b)  $^{234}\text{Th}$   
(c)  $^{242}\text{Pu}$  (d)  $^{210}\text{Po}$
17. Which one has more melting & boiling point?  
(a)  $\text{C}_4\text{H}_{10}$  (b)  $\text{C}_6\text{H}_{14}$   
(c)  $\text{C}_{10}\text{H}_{22}$  (d)  $\text{C}_8\text{H}_{18}$
18. Soot is —  
i. Carbon particles  
ii. Harmful for health  
iii. Layer of sulfur  
Which one of the following is correct?  
(a) i & iii (b) i, ii & iii  
(c) ii & iii (d) i & ii

19. Same number of valence electron containing elements are —

- i. Be                      ii. O  
iii. Sr

Which one of the following is correct?

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

20. In electrochemical cell—

- i. anode is negatively charged  
ii. oxidation occurs in anode  
iii. reduction occurs in cathode

Which one of the following is correct?

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

21. Which one diffuses first?

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

22. 1 ppm = ?

- i. mg/L  
ii.  $\text{mg/m}^3$   
iii.  $\text{mg/dm}^3$

Which one of the following is correct?

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

23. Which one is thermoplastic polymer?

- (a) Polyvinyl chloride  
(b) Bakelite  
(c) Fiber glass  
(d) Epoxy glue

24. What is the bond energy of Cl-Cl?

- (a) 435 kJ/mole                      (b) 244 kJ/mole  
(c) 326 kJ/mole                      (d) 498 kJ/mole

25. Chemicals which can be used to ripen fruits are —

- i. Ethephon  
ii. Bethylene  
iii. Calcium carbide

Which one of the following is correct?

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

26. Electricity is produced by the reaction—

- (a) Addition                      (b) Analysis

(c) Combustion                      (d) Synthesis

27. Percent composition of Cu in  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ ?

- (a) 25.45%                      (b) 36.07%  
(c) 12.83%                      (d) 57.72%

28. Minerals are —

- i. Petroleum  
ii. Coal  
iii. Natural gas

Which one of the following is correct?

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

29. The ore without magnetic property is —

- (a)  $\text{F}_2\text{O}_3$                       (b)  $\text{TiO}_2$   
(c)  $\text{FeWO}_4$                       (d)  $\text{FeO} \cdot \text{Cr}_2\text{O}_3$

30. What is wax —

- (a) Alkali                      (b) Salt  
(c) Organic acid                      (d) Hydrecation

31. The type of bonds between two carbon atoms in  $\text{CaC}_2$  are —

- (a) Two sigma and one pie bond  
(b) one sigma bond  
(c) one pie bond  
(d) one sigma and two pie bond

32. Rust is —

- i. Iron oxide  
ii. formed by Fe,  $\text{O}_2$ ,  $\text{H}_2\text{O}$   
iii. Brown in color

Which one of the following is correct?

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

33. Which one of the following is alkaline earth metal?

- (a) Al                      (b) Na  
(c) Ca                      (d) N

34. Which one of the following limestone?

- (a)  $\text{CaCO}_3$                       (b)  $\text{CaO}$   
(c)  $\text{CaCl}_2$                       (d)  $\text{Ca}(\text{OH})_2$

35. Which one is detergent?

- (a)  $\text{C}_{12}\text{H}_{25}\text{-O-SO}_3\text{Na}$   
(b)  $\text{C}_{17}\text{H}_{35}\text{COONa}$   
(c)  $\text{C}_{15}\text{H}_{31}\text{COOK}$   
(d)  $\text{C}_{18}\text{H}_{37}\text{COONa}$

1	(b)	2	(c)	3	(b)	4	(b)	5	(b)	6	(c)	7	(b)	8	(b)	9	(d)	10	(b)	11	(d)	12	(c)	13	(a)	14	(d)	15	(d)	16	(b)	17	(c)	18	(d)	19	(d)	20	(b)
21	(c)	22	(c)	23	(a)	24	(b)	25	(c)	26	(b)	27	(a)	28	(a)	29	(a)	30	(d)	31	(d)	32	(c)	33	(c)	34	(a)	35	(a)										