CHEMISTRY

BOOKS - SURA CHEMISTRY (TAMIL ENGLISH)

GOVT. MODEL QUESTION PAPER - 2019-2020

Part I

1. Which one of the following ore is best concentrated by froath - floatation method ?

    A. Magnetite

    B. Haematite

    C. Galena

D. Cassiterite

Answer: C

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2. Which compound is used as flux in metallurgy ?

A. Boric acid

B. Borax

C. Diborane

D. BF_3

Answer: B

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3. The shape of $XeOF_4$ is

    A. T shaped

    B. pyramidal

    C. Square planar

    D. Square pyramidal

Answer: D

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4. How many moles of acidified KMn04 required to oxidise

one mole of oxalic acid ?

A. 5

B. 1.5

C. 0.6

D. 0.4

Answer: C

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5. The type of isomerism exhibited by $[Pt(NH_3)Cl_2]$?

A. coordination isomerism

B. linkage isomerism

C. optical isomerism

D. geometrical isomerism

Answer: d

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6. The fraction of the total volume occupied by the atoms is

a fcc is

A. $\dfrac{\pi}{6}$

B. $\dfrac{\pi}{3\sqrt{2}}$

C. $\dfrac{\pi}{4}$

D. $\dfrac{\sqrt{3}\pi}{8}$

Answer: B

7. The half life period of a radioactive element is 140 days. After 280 days 1g of element will be reduced to which amount of the following ?

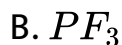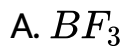A. $\dfrac{1}{4}$

B. $\dfrac{1}{16}$

C. $\dfrac{1}{8}$

D. $\dfrac{1}{2}$

Answer: B

8. Which is not a Lewis base ?

A. BF_3

B. PF_3

C. CO

D. F-

Answer: A

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9. During electrolysis of molten copper chloride, the time required to produce 0.2 mole o f chlorine gas using a current of 2A is

A. 32.66 min

B. 321.66 min

C. 378 min

D. 260 min

Answer: B

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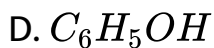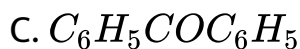10. Smoke is a colloidal solution of
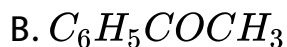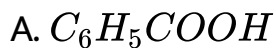
A. Solid in gas

B. Gas in gas

C. liquid in gas

D. Gas in liquid

Answer: A

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11. Isopropylbenzene on air oxidation in the presence of dilute acid gives

A. C_6H_5COOH

B. $C_6H_5COCH_3$

C. $C_6H_5COC_6H_5$

D. C_6H_5OH

Answer: D

12. But -2 ene on ozonolyis followed by subsequent cleavage

with Zn and water gives

    A. ethanal

    B. propanal

    C. propanone

    D. Methanal

Answer: A

13.

$$\text{Aniline} + \text{benzoylchloride} \xrightarrow{NaOH} C_6H_5 - NH - COC_6H_5$$
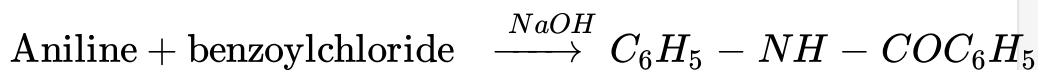
this reaction is known as

    A. Friedal - craft's reaction

    B. HVS reaction

    C. Schootten- Baumann reaction

    D. Cannizaro reaction

Answer: C

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14. The pyrimidine bases present in DNA are

A. Cytosine and Adenine

B. Cytosine and Gusanine

C. Cytosine and Thiamine

D. Cytosine and Uracil

Answer: C

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15. Nylon is an example of

A. Polyamide

B. polythene

C. polyester

D. polysaccharide

Answer: A

Part Ii

1. How will you identify borate radical ?

2. How is pure phosphine prepared from phosphorous acid ?

3. What are ionisation isomers ? Explain with an example

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4. Explain pseudo first order reaction with an example.

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5. State Faraday's second law of electrolysis

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6. How will you convert glycerol into acrolein ?

7. Give any four differences between DNA and RNA

8. Write a short note on Antioxidants.

9. 50 ml of 0.05 M HNO_3 is added to 50 ml of 0.025 M KOH.

Calculate the pH of the resultant solution

1. Explain the electro metallurgy of aluminium

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2. Give the uses of helium .

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3. Explain chromyl chloride Test

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4. A face centered cubic solid of an element (atomic mass 60) has a cube edge of 4Å. Calculate its density.

5. Describe the construction of Daniel cell and write its cell reaction .

6. Write short notes on

(i) Negative catalyst
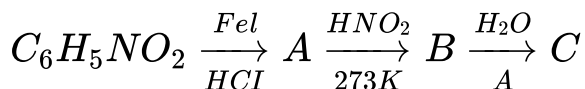
(ii) Phase transfer catalyst

7. Explain the mechanism of Aldol condensation of acetaldehyde.

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8. Explain the preparation of Nylon - 6.6 and Buna-S .

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9. Identify A to C in the following sequence ?

$$C_6H_5NO_2 \xrightarrow[HCI]{Fel} A \xrightarrow[273K]{HNO_2} B \xrightarrow[A]{H_2O} C$$

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1. (i) Explain how gold ore is leached by cyanide process

(ii) Explain the classification of Inosilicates

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2. (i) What are interhalogen compounds ?

(ii) Explain the preparation of $KMnO_4$

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3. (i) Explain $[Fe(CN)_6]^{3-}$ is paramagnetic , using Crystal field theory

(ii) What is schottky detect ?

4. (i) Derive Henderson- Hasselbalch equation

(ii) What is kohlraush's law ?

5. (i) Explain Intermediate compound formation theory

(ii) Write short notes on ultra filtration

6. How the following conversions are effected ?

(i) Phenol $\rightarrow$ Salicylaldehyde

(ii) Phenol $\rightarrow$ phenolphthalein

(iii) glycol $\rightarrow$ 1,4 dioxane

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7. Write short notes on

(i) Mustard oil reactions

(ii) Carbylamine reaction

(iii) Gabriel pathalimide synthe$is

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8. Explain the structure of Fructose

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9. A frist order reaction is 40% complete in 50 minutes. Calculate the value of the constant. In what time will the reaction be 80 % complete ?

(ii) K_{sp} of Ag_2CrO_4 is 1.1×10^{-12} . What is the solubility of Ag_2CrO_4 in 0.1 MK_2CrO_4

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10. Compound A of molecular formula C_7H_6O reduces Tollen's reagent when A reacts with 50% NaOH gives compound B of molecular formula C_7H_8O and C of molecular formula $C_7H_5O_2Na$ Compound C on tretatment with dil HCL gives compound D of molecular formula $C_7H_6O_2$. when D is heated with sodalime gives compound E. Identify A, B, C,D & E. write the corresponding equations .