solution of calcium chloride at 25°C. The specific conductance of calcium chloride is 12.04×10^{-2} sm^{-1}. 3

b) State Kohlraush's law. 2

(OR)

c) How will you prepare phenol from

i) Cumene 3

ii) Halo arenes 2

29. a) Explain the following reaction.

i) Stephen's reaction 2

ii) Etard reaction 2

iii) Benzoin condensation 1

(OR)

b) An alkene (A) on ozonolysis gives propanone and aldehyde (B). When (B) is oxidised (C) is obtained. (C) is treated with Br_2/P gives (D) which on hydrolysis gives (E). When propanone is treated with HCN followed by hydrolysis gives (E). Identify A, B, C, D and E.

12 P Reg. No. _____

Second Mid-Term Test - 2019

CHEMISTRY

Time : 1.30 hrs. Max. Marks : 50

PART - I

I. Choose the correct answer. **10 x 1 = 10**

1. Conjugate base for Bronted acids H_2O and HF are

a) OH^- and H_2FH^+, respectively b) H_3O^+ and F^- respectively

c) OH^- and F^- respectively d) H_3O^+ and H_2F^+ respectively

2. The pH of 10^{-5} M KOH solution will be

a) 9 b) 5 c) 19 d) none of these

3. Which of these is not likely to act as Lewis base?

a) BF_3 b) PF_3 c) CO d) F^-

4. While charging lead storage battery

a) $PbSO_4$ on cathode is reduced to Pb

b) $PbSO_4$ on anode is oxidised to PbO_2

c) $PbSO_4$ on anode is reduced to Pb

d) $PbSO_4$ on cathode is oxidised to Pb

5. Among the following cells

I) Leclanche cell

II) Nickel - cadmium cell

III) Lead storage battery

IV) Mercury cell

Primary cells are

a) I and IV b) I and III c) III and IV d) II and III

6. Assertion : Pure iron when heated in dry air is converted with a layer of rust.

Reason : Rust has the composition Fe_3O_4

a) If both assertion and reason are true and reason is the correct explanation of assertion.

b) If both assertion and reason are true but it is not correct explanation of assertion.

c) Assertion is true but reason is false.

d) both assertion and reason are false

7. Which one of the following is strongest acid

a) 2-nitrophenol b) 4-chlorophenol c) 4-nitrophenol

d) 3-nitrophenol

8. Williamsxon synthesis of preparing dimethyl ether is a/an

a) SN^1 reaction b) SN^2 reaction c) electrophilic addition

d) electrophilic substitution

9. In the following reaction $HC \equiv CH \xrightarrow[HgSO_4]{H_2SO_4} X$. The product X will not give a) Tollen's Test b) Victor Meyer test c) Iodoform Test d) Fehling solution test

10. The reagent used to distinguish between acetaldehyde and benzaldehyde is

a) Tollens reagent b) Fehling's solution c) 2, 4-dinitrophenyl hydrazine d) semicarbazide

PART - II

Answer any five questions. Question No.16 is compulsory. **5 x 2 = 10**

11. Define solubility product

12. What is common ion effect? Give an example.

13. Define anode and cathode.

14. Why AC current is used instead of DC in measuring the electrolytic conductance?

15. Give the uses of diethyl ether.

16. What will be the product (X and A) for the following reaction

Acetylchloride $\xrightarrow[(ii)H_3O^+]{(i)CH_3MgBr} \underset{?}{X} \xrightarrow{\text{acid } K_2Cr_2O_7} \underset{?}{A}$

17. How will you prepare Malachitegreen from benzaldehyde.

18. What is Schiff's reagent?

PART - III

Answer any five questions. Q.No.23 is compulsory. **5 x 3 = 15**

19. Calculate the pH of 1.5×10^{-3} M soltuion of $Ba(OH)_2$.

20. What is Buffer solution? Give its types with examples.

21. State Faraday's laws of electrolysis.

22. Why does conductivity of a solution decrease on dilution of the solution.

23. A copper electrode dipped in 0.1 M copper sulphate solution at 25°C. Calculate the electrode potential of copper.
[$E^\circ_{Cu^{2+}} / Cu = 0.34$]

24. Explain Kolbe's reaction.

25. What is urotropine? How it is prepared? Give its use.

26. Explain the mechanism of cannizaro reaction.

PART - IV

Answer all the questions. **3 x 5 = 15**

28. a) Derive Henderson - Hasselbalch equation 3

b) Define Buffer index. 2

(OR)

c) Derive an expression for Nernst equation 5

28. a) Calculate the molar conductance of 0.025 M aqueous