V12C   Virudhunagar District   12054
Common Second Revision Examination - 2025

Standard 12
Time: 3.00 Hours   CHEMISTRY   Marks: 70
Part - I
$15 \times 1 = 15$

Choose the correct answer:

1) Which of the following is used as acidic flux?
   a) CaO   b) FeO   c) $FeSiO_3$ d) SiO_2

2) The role of barium sulphate in Rosenmund reduction is
   a) Catalyst   b) Reducing agent   c) Catalytic poison   d) Promoter

3) **Assertion** : Phenol is more acidic than ethanol
   Reason : Phenoxide ion is resonance stabilized
   a) If both assertion and reason are true and reason is the correct explanation of assertion
   b) If both assertion and reason are ture but reason is not the correct explanation of assertion
   c) assertion is true but reason is false
   d) Both assertion and reason are false

4) Which one of the following is not produced by body?
   a) DNA   b) Enzymes   c) Harmones   d) Vitamins

5) Match items in column I with the items of Column - II and assign the correct code
Column - I	Column - II
A Borazole	1. $B(OH)_3$
B Boric acid	2. $B_3N_3H_6$
C Quartz	3. $Na_2[B_4O_5(OH)_4] 8H_2O$
D Borax	4. SiO_2

	A	B	C	D
a)	2	1	4	3
b)	1	2	4	3
c)	2	1	3	4

   d) None of these

6) CsCl has bcc arrangement, its unit cell edge length is 400 pm, its inter atomic distance is
   a) 400 pm   b) 800 pm   c) $\sqrt{3} \times 100$ pm   d) $\left(\frac{\sqrt{3}}{2}\right) \times 400$ pm

7) pH of 0.001 M HCl is
   a) 2   b) 3   c) 4   d) 5

8) The sum of primary valency and secondary valency of the metal M in the complex $[M(en)_2(OX)]$ Cl is
   a) 3   b) 6   c) −3   d) 9

9) The half life period of a first order reaction is 5 minutes, the time required for 99.9% completion is nearly equal to
   a) 99.9 min   b) 49.9 min   c) 10 min   d) 50 min

10) The blue colour of the sky is due to .... of air particles
    a) Tyndall effect   b) frequency factor   c) activation energy   d) collision rate

11) Which of the following is weakest acid among all?
    a) HI   b) HF   c) HBr   d) HCl

12) The most common oxidation state of actinoids is
    a) +2   b) +4   c) +3   d) +6

13) Aniline + Benzoyl Chloride $\xrightarrow{NaOH}$ $C_6H_5NH - COC_6H_5$ this reaction is known as
    a) Friedel - Crafts reaction   b) HVZ reaction   c) Schotton - Baumann reaction   d) Kolbe's reaction

14) Which of the following is a mono saccharide?
    a) Sucrose   b) Galactose   c) Lactose   d) Maltose

15) How many Faraday's of electricity are required for the following reaction to occur $MnO_4^- \rightarrow Mn^{2+}$
    a) 3F   b) 5F   c) 7F   d) 1F

Part - II

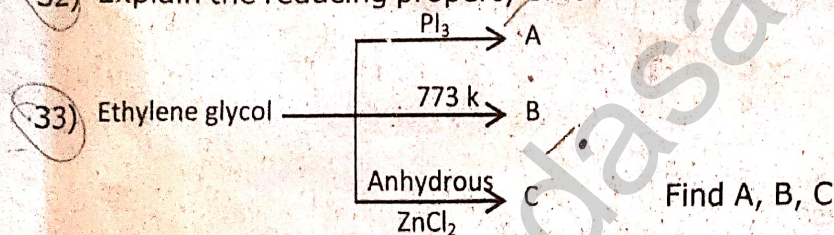**Answer any six questions: Q.No. 24 is compulsory.**   6×2=12

16) By which method aluminium is extracted. Describe the role of Cryolite in the extraction of aluminium
17) Draw the structure of Diborane (B_2H_6)
18) Write the differences between white phosphorus and red phosphorus
19) What is meant by the term "Coordination number"? What is the co-ordination number of atoms in bcc structure?
20) What is buffer solution? Give the example for buffer solution
21) Ultra filtration - Write short notes
22) Write a note on esterification reaction
23) Write the structure of Orcinol and Phloroglucinol
24) Mention the Oxidation state and co-ordination number of central metal atom/ion in $Na_2[Ni(EDTA)]$

Part - III

Answer any six questions: Q.No. 33 is compulsory.   6×3=18

25) What is allotropism. Mention the allotropes of Carbon
26) Mention the uses of Chlorine
27) Why d-block elements form complexes
28) What is CFSE?
29) Write notes on Schotky defect
30) Write a balanced equation for the dissociation of the following in water and identify the conjugate acid - base pairs i) NH_4^+ ii) H_2SO_4
31) Explain Cannizaro reaction.
32) Explain the reducing property of formic acid with example

33) Ethylene glycol
$\xrightarrow{PI_3}$ A
$\xrightarrow{773\ k}$ B
$\xrightarrow{\text{Anhydrous } ZnCl_2}$ C   Find A, B, C

Part - IV

Answer all the questions   5×5=25

34) a) Based on VB theory explain why $[Cr(NH_3)_6]^{3+}$ is paramagnetic, while $[Ni(CN)_4]^{2-}$ is diamagnetic

(OR)

b) Compare lanthanoids and actinoids

35) a) i) Give the limitations of Ellingham diagram
      ii) Write the uses of Borax

(OR)

b) Discuss the preparation of colloids by dispersion methods - any (3) methods.

36) a) i) Define Buffer index
      ii) Derive the relation between pH and pOH

(OR)

b) Discuss the Electro chemical mechanism of corrosion

37) a) i) What is Urotropine, how will you prepare and write its uses
      ii) Write carbylamine reaction

(OR)

b) i) Write a note on denaturation of proteins
   ii) Give any three differences between Hormones and Vitamins

38) a) i) What are biodegradable polymers? Give example
      ii) How do antiseptics differ from disinfectants?

(OR)

b) Write notes on i) Mustard oil reaction   ii) Diazotization reaction
   iii) Gomberg reaction

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