B.A. / B.Sc. SEMESTER 1 INTERNAL EXAMINATION, 2021
FAKIR CHAND COLLEGE CENTRE (551)

INSTRUCTIONS FOR CANDIDATES

READ ALL THE INSTRUCTIONS CAREFULLY BEFORE WRITING ANSWERS

1. Total **TIME OF EXAMINATION: 1 HOUR (30 Mins. For Each Course Paper)**
2. **A) Question Paper Comprises Of TWO Separate Questions – CC1 (10 Marks) [CC1A+CC1B] And CC2 (10 Marks) [CC2A+CC2B].**

   B) CANDIDATES MUST HAVE TO ANSWER CC1A, CC1B, CC2A AND CC2B SEPARATELY IN FOUR SEPARATE PAGES [EACH IN A A4-SIZED PLAIN PAPER).

   C) ON EACH PAPER CLEARLY MENTION UNIVERSITY ROLL NO., UNIVERSITY REG. NO. AND PAPER NO. ON TOP OF THE PAGE AND THEN BELOW WRITE ONLY THE CHOSEN OPTIONS AGAINST CORRESPONDING QUESTION NUMBERS *(For Example, If Option 'A' Is Correct For Q.1 Then Write Q.1 – A)*].

   D) Then Candidates Have To Prepare FOUR SEPARATE PDF FILES By Scanning Each Of The Four Answer Scripts Clearly [Give File Names As 'University Roll No. (Paper No.)' Format (Like 213551-XX-XXXX (CC1A), 213551-XX-XXXX (CC1B), 213551-XX-XXXX (CC2A) And 213551-XX-XXXX (CC2B)]

   E) Finally, Upload The Four Files One By One In The Stipulated Places Of The Google Form before Submission Of The Form.
3. Use **ONLY BLUE INK (Writings MUST be clearly visible)** For Writing Your Answers
4. Give **AT LEAST 1CM MARGINS** In All The Four Sides Of Each Page

2021
B.A./B.Sc. Semester-1 Examination
University of Calcutta
CHEMISTRY – HONOURS
INTERNAL EXAMINATION
Paper:CC1
F.M. – 10

FAKIR CHAND COLLEGE CENTRE (C551)

Choose the correct option in each case and report (no need to write the answer in sentence):
ANSWER ALL THE QUESTIONS ***1x10***

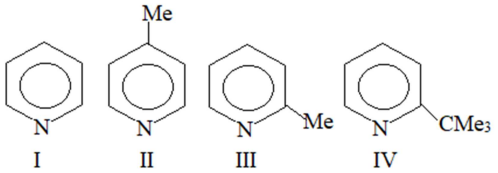
CC-1A

1. Ground state term symbol for the central metal ions in $[Co(NH_3)]^{3+}$
   a) $^5D_0$ b) $^5D_4$ c) $^5D_2$

2. Orbital angular momentum of p electrons is
   a) $\sqrt{3}h/2\pi$ b) $\sqrt{6}h/2\pi$ c) $h/2\pi$

3. Which of the following acts as a buffer solution
   a) 1:1 CH_3COOH and NaOH
   b) 1:2 CH_3COOH and NaOH
   c) 2:1 CH_3COOH and NaOH

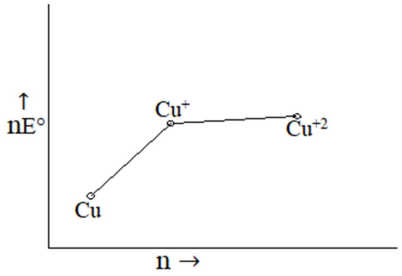
4. The correct order of basic strength of the following compounds is



   a) II > I > III > IV b) IV > III > II > I c) I > II > IV > III

5. One mole of ferrous oxalate requires____ moles of MnO_4^- to get oxidised completely in an acidic medium
   a) 0.6 moles b) 0.4 moles c) 0.2 moles

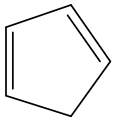
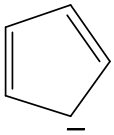
6. Which of the following statement is correct for the following Latimer Diagram



   a) Disproportionation and comproportionation reaction occurs simultaneously
   b) Cu and Cu^{2+} are comproportionate to Cu^+
   c) Cu^+ is disproportionate to Cu and Cu^{2+}

CC-1B

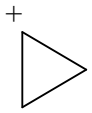
7. Identify the most stable compound :

a)  b)  c) 

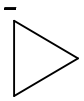
8. Number of nodal plane of ground state HOMO of 1,3-butadiene is

a) 0 b) 1 c) 2

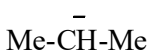
9. Choose the correct option :



I



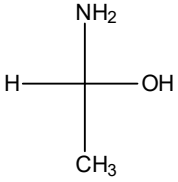
II



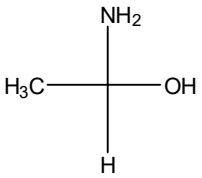
III

a) I >II>III b) II > I> III c) III> II> I

10. Relation between two molecules is



and



a) Enantiomer b) Homomer c) Diastereomer

2021
B.A./B.Sc. Semester 1 Examination
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CHEMISTRY – HONOURS
INTERNAL EXAMINATION
Paper: CC2
F.M. – 10
FAKIR CHAND COLLEGE CENTRE (C551)

Choose the correct option in each case and report (no need to write the answer in sentence):
ANSWER ALL THE QUESTIONS 1x10

CC-2A

1. The compressibility factor of an ideal gas is
   a) 0 b) 1 c) >1

2. According to Equipartition principle, the predicted high temperature limiting value of the molar heat capacity at constant volume for C_2H_2 is
   a) 8.5 R b) 9.0 R c) 9.5 R

3. What is the dimension of coefficient of Viscosity, η?
   a) $M\,L^{-2}\,T^{-1}$ b) $M\,L^{-1}\,T^{-1}$ c) $M^{-1}\,L\,T^{-1}$

4. For an enzyme catalyzed reaction, at large substrate concentration the rate of the reaction with respect to the substrate is
   a) zero order b) 2^{nd} order c)1^{st} order

5. For a first order reaction of the type: A → P in time 't', which of the following plots will be linear and pass through the origin
   a) [A] vs t b) $\ln\left(\frac{[A]_0}{[A]_t}\right)$ vs t c) $\frac{1}{[A]_t}$ vs t

6. The ratio of Average (<C>), r.m.s (Crms) and most probable (Cmp) speeds of a gas at a given temperature is (<C> : Crms : Cmp =)
   a) 1.128 : 1.225 : 1 b) 1.128 : 1 : 1.225 c) 1 : 1.225 : 1.128

CC-2B

7. Absolute configuration of D-glyceraldehyde is –
   a) *R* b) *S* c) *E*

8. H_2O consists of symmetry elements are-
   a) C_2, $2\sigma_v$ b) C_2, σ_v c) C_2, σ_d

9. Among exo- and endo-norbornyl brosylates, the former isomer reacts faster with AcOH/KOAc. This observation is
   (a) True (b) False (c) May be true or false

10. Increase in s-character at the carbanion carbon generally
    (a) destabilises the carbanion (b) has no effect on carbanion stability
    (c) stabilises the carbanion