

## Department of Chemistry

### Minutes of the meeting

The members of the Department of Chemistry (07-01.2021) in the Department of Chemistry Sri R. Ramesh Naidu, HOD, Department of Chemistry, GDC(M), Srikakulam and discussed the following agenda.


Agenda:

#### 1. PLAN TO CONDUCT COACHING FOR THE PG CET FOR MSc. ADMISSION

After taking resolution of the department will conduct coaching for the PG CET for MSc Admission from 01-02-2021 to 20-02-2021 from Monday to Saturday from 9.00 am to 9.45 am.

Signatures:-

- 1 
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Lecturer in-charge  
Dept. of Chemistry  
Govt. Degree & P.G. College (Men)  
SRIKAKULAM



## REQUEST LETTER

From  
Sri R. Ramesh Naidu  
Head of the Department of Chemistry,  
Govt. Degree College For Men,  
Srikakulam.

To  
Dr.M.Babu Rao,,  
Principal,  
Govt. Degree College For Men,  
Srikakulam.


Subject: Request to Conduct coaching for the M.Sc Chemistry Entrance Test-Reg

Respected Madam,

I am writing to request your approval to conduct a coaching for the M.Sc Chemistry Entrance Test for our students from February 1<sup>st</sup>, 2021, to February, 20<sup>th</sup>, 2021. These sessions are vital for our students' success in pursuing higher studies. With your support, we aim to provide competitive guidance to ensure their preparedness for the upcoming examinations. Your endorsement of this initiative would greatly benefit our students and further enhance the academic excellence of our institution.

Thank you for considering our request.

Yours Sincerely,

  
Lecturer in-charge  
Dept. of Chemistry  
Govt. Degree & P.G. College (Men)  
SRIKAKULAM



*Department of Chemistry,  
Government Degree College (M),  
Srikakulam.*

### **Circular**


This is to inform all the students that the Department of Chemistry conducting coaching for PG CET for MSc Admission from 01-02-2021 to 20-02-2021 from Monday to Saturday from 9.00 am to 9.45 am.

Interested students give their names to Dr. S. Rama Krishna, Lecturer in Chemistry on or before 29-01-2021.

Signatures:

III MPC & }  
MCIC } 

I BZC }  
BTZC }   
CBMA }

  
Lecturer in-charge  
Dept. of Chemistry  
Govt. Degree & P.G. College (Men)  
SRIKAKULAM



## **DEPARTMENT OF CHEMISTRY**

### **GUIDANCE FOR COMPETITIVE EXAMINATION COACHING FOR THE AP PGCET FOR MSc. ADMISSION**

#### **REPORT 2020-2021**

Department of Physics, Government Degree College (Men), Srikakulam conducted AP PGCET coaching for the students interested to appear for the test. In charge and lecturers of the department of physics involved to teach different topics of the coaching. The coaching commenced on 01-02-2021. The course was scheduled from Monday to Saturday from 9.00 am to 9.45 am. Four students attended the coaching. Detailed discussion, Conceptual development and problem-solving session of the following topics were done:

- **Coordination Chemistry:** IUPAC nomenclature, bonding theories– review of Werner's theory and Sidgwick's concept of coordination, Valence bond theory, geometries of coordination numbers 4-tetrahedral and square planar and 6-octahedral and its limitations, crystal field theory, splitting of d-orbitals in octahedral, tetrahedral and square-planar complexes – low spin and high spin complexes – factors affecting crystal-field splitting energy, merits and demerits of crystal-field theory. Isomerism in coordination compounds – structural isomerism and stereo isomerism, stereochemistry of complexes with 4 and 6 coordination numbers.
- **Spectral and Magnetic Properties of Metal Complexes:** Electronic absorption spectrum of  $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$  ion. Types of magnetic behavior, spin-only formula, calculation of magnetic moments, experimental determination of magnetic susceptibility – Gouy method.
- **Reactivity of metal complexes:** Labile and inert complexes, ligand substitution reactions–  $\text{S}_\text{N}1$  and  $\text{S}_\text{N}2$ , substitution reactions of square planar complexes – Trans effect and applications of trans effect.
- **Stability of Metal Complexes:** Thermodynamic stability and kinetic stability, factors affecting the stability of metal complexes, chelate effect, determination of composition of complex by Job's method and mole ratio method.
- **Hard and soft acids bases (HSAB):** Classification, Pearson's concept of hardness and softness, application of HSAB principles – Stability of compounds / complexes, predicting the feasibility of a reaction.



- **Bioinorganic Chemistry:** Essential elements, biological significance of Na, K, Mg, Ca, Fe, Co, Ni, Cu, Zn and chloride (Cl<sup>-</sup>). Metalloporphyrins – hemoglobin, structure and function, Chlorophyll, structure and role in photosynthesis.
- **Polynuclear Hydrocarbons** - Structure of naphthalene and anthracene (Molecular Orbital diagram and resonance energy) Any two methods of preparation of naphthalene and reactivity. Reactivity towards electrophilic substitution. Nitration and sulfonation as examples.
- **Halogen compounds:** Nomenclature and classification of alkyl (into primary, secondary, tertiary), aryl, aralkyl, allyl, vinyl, benzyl halides. Chemical Reactivity, formation of RMgX Nucleophilic aliphatic substitution reaction- classification into SN1 and SN2. Energy profile diagram of SN1 and SN2 reactions. Stereochemistry of SN2 (Walden Inversion) SN1 (Racemisation). Explanation of both by taking the example of optically active alkyl halide – 2-bromobutane. Ease of hydrolysis – comparison of alkyl, benzyl, allyl, vinyl and aryl halides.
- **Hydroxy compounds:** Nomenclature and classification of hydroxy compounds. Alcohols: preparation with hydroboration reaction, Grignard synthesis of alcohols. Phenols: Preparation i) from diazonium salt, ii) from aryl sulphonates, iii) from cumene. Physical properties- Hydrogen bonding (intermolecular and intramolecular). Effect of hydrogen bonding on boiling point and solubility in water. Chemical properties: acidic nature of phenols. formation of alkoxides/phenoxides and their reaction with RX. replacement of OH by X using PCl<sub>5</sub>, PCl<sub>3</sub>, PBr<sub>3</sub>, SOCl<sub>2</sub> and with HX/ZnCl<sub>2</sub>. esterification by acids (mechanism). dehydration of alcohols. oxidation of alcohols by CrO<sub>3</sub>, KMnO<sub>4</sub>. special reaction of phenols: Bromination, Kolb-Schmidt reaction, Reimer-Tiemann reaction, Fries rearrangement, azocoupling. Identification of alcohols by oxidation with KMnO<sub>4</sub>, ceric ammonium nitrate, Lucas reagent and phenols by reaction with FeCl<sub>3</sub>. Polyhydroxy compounds: Pinacol-Pinacolone rearrangement.

Continuous monitoring and performance analysis of individual students were done to enable them to write the examination with confidence. Special doubt clearing classes were also conducted. The previous question papers were analysed and students were given various easy techniques to find the solution of the numerical problems. The coaching was completed on 20-02-2021





**Photo's of the activity :**





**Student's attendance:**

[Student's Attendance Register](#)

**Student's Feedback:**

[feedback](#)

**Admit cards for the benefited students:**

K. MADHU BABU, M.R.PG COLLEGE VIZIANAGARAM

[K. MADHU BABU](#)