

ANDHRA PRADESH PUBLIC SERVICE COMMISSION: HYDERABAD

NOTIFICATION NO.30/2016, Dt.23/12/2016

**ASSISTANT CHEMIST IN A.P. GROUND WATER SERVICE
(GENERAL RECRUITMENT)**

PARA-2: EDUCATIONAL QUALIFICATIONS:

Applicants must possess the qualifications from a recognized University as detailed below or equivalent thereto, subject to various specifications in the relevant service rules and as per the indent received from the Department as on the date of notification.

Sl. No	Name of the Post	Educational Qualifications
01	Assistant Chemist in A.P. Ground Water Service.	Must hold M.Sc degree in Chemistry or applied Chemistry or a degree in Chemical Engineering, Chemical Technology from a University or Institution recognized by the University Grants Commission or an equivalent qualification.

**SCHEME AND SYLLABUS FOR THE POST OF ASSISTANT CHEMIST
IN AP GROUND WATER SERVICE**

SCHEME

Objective Type Examination		Max. Marks	No. Questions	Duration
PAPER - 1	General Studies & Mental Ability	150 Marks	150 Questions.	150 Minutes
PAPER - 2	Subject	150 Marks	150 Questions.	150 Minutes
PAPER - 3	Subject	150 Marks	150 Questions.	150 Minutes
Total Marks		450		
<u>NEGATIVE MARKS:</u> As per G.O.Ms. No.235, Finance (HR-I, Plg & Policy) Dept., Dt. 06/12/2016, for each wrong answer will be penalized with 1/3rd of the marks prescribed for the question.				

SYLLABUS

PAPER -I

GENERAL STUDIES& MENTAL ABILITY

- Events of national and international importance.
- Current affairs- international, national and regional.
- General Science and it applications to the day to day life Contemporary developments in Science & Technology and Information Technology
- Social- economic and political history of modern India with emphasis on Indian national movement.
- Indian polity and governance: constitutional issues, public policy, reforms and e-governance initiatives.
- Economic development in India since independence.
- Geography of India with focus on Andhra Pradesh.
- Disaster management: vulnerability profile, prevention and mitigation strategies, Application of Remote Sensing and GIS in the assessment of Disaster
- Sustainable Development and Environmental Protection
- Logical reasoning, analytical ability and data interpretation.
- Data Analysis:
Tabulation of data
Visual representation of data
Basic data analysis(Summary Statistics such as mean and variance coefficient of variation etc.,) and Interpretation
- Bifurcation of Andhra Pradesh and its Administrative, Economic, Social, Cultural, Political, and legal implications /problems, including

- a). Loss of capital city, challenges in building new capital and its financial implications.
- b). Division and rebuilding of common Institutions.
- c). Division of employees, their relocation and nativity issues.
- d). Effect of bifurcation on commerce and entrepreneurs.
- e). Implications to financial resources of state government.
- f). Task of post-bifurcation infrastructure development and opportunities for investments.
- g). Socioeconomic, cultural and demographic impact of bifurcation.
- h). Impact of bifurcation on river water sharing and consequential issues.
- i). AP REORGANISATION ACT, 2014 on AP and the arbitrariness of certain provisions.

PAPER-II

1. PROCESS CALCULATIONS AND THERMODYNAMICS: Laws of conservation of mass and energy; use of tie components; recycle, bypass and purge calculations ;degree of freedom. Zeroth law; Isothermal states, Principles of thermometry. Scales of temperature. First and second laws of thermodynamics, Equations of state and thermodynamics properties of real systems; Phase equilibria; excess properties and correlations of active components; chemical reaction equilibria. Basics statistical thermodynamics.

2. Chemical periodicity: Periodic properties

3. Atomic structure nuclear properties, molecular symmetry, bonding in polyatomic molecules, concepts of acids and bases

4. Main group elements and their compounds Synthesis, bonding and structure.

5. Transition metal Chemistry and coordination compounds : Structure and bonding, Molecular Orbital (MO) theory of complexes, Crystal field theory (CFT), Jahn- Teller effect, magnetic properties, orbital splitting, spin-orbit coupling, calculation of CFSE, spectra of octahedral and tetrahedral complexes of d1 to d9 systems, and reaction mechanisms.

6. Organometallic compounds, their synthesis, bonding and structure, and reactivity. Organometallic compounds in homogenous catalysis.

7. Cage like structures and metal clusters.

PAPER-III

1. Analytical Chemistry: separation techniques spectroscopic electro- and thermo- analytical methods
2. Characterization of inorganic compounds by infrared-, Raman- NMR-, electron spin resonance (EPR)-, UV-Visible, and Mass spectroscopic techniques
3. Nuclear chemistry — nuclear reactions fission and fusion and their applications, radio-analytical techniques and activation analysis
4. Molecular spectroscopy: Principles and applications of rotational and vibrational spectroscopy, NMR and EPR
5. Chemical equilibrium: basic concepts, Solubility product, common ion effect, pH and buffer solutions, acids and bases hydrolysis of salts, phase equilibrium
6. Characterization of organic compounds by infrared (IR)-, NMR- UV-Visible- , and Mass- spectroscopy techniques

Sd/-
SECRETARY