

Department of Chemical Engineering
NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL
P.O. SRINIVASNAGAR, MANGALORE-575 025

Shortlisted Candidates for Written Test / Interview

Under DST-SERB-CRG

PI: Prof. (Dr.) P E JagadeeshBabu

Written Test Date: 21.05-2024

Written Test Time: 10.30AM Onwards

Project Title: "Investigation on Functionalised-Graphene-Oxide Anchored Arbitrator in PANI/PS based Polymer Electrolyte Membrane for Fuel Cell Application"

Sl.No.	Name	Qualification
1.	Sonu P R +91 9496791047 sonuparuthooly@gmail.com	MSc Chemistry
2.	MADHU KAMBANAVAR 7349451322 madhukambannavar@gmail.com	M.Sc Chemistry
3.	Ms. VANISHREE A L 9071603553 vanigowda133@gmail.com	M.Sc Chemistry
4.	UMASHANKAR MADHRIYA 8827312942 bittumadhariya99@gmail.com	M.Sc Chemistry
5.	Salian Vivek Ashok 8600367379/8766569330 vivekasalian@gmail.com	M.Sc Chemistry
6.	Ganesh N 8497828218 Ganeshsatish1098@gmail.com	MSc Chemistry
7.	Lohith Ks 6364823268 lohithks11996@gmail.com	MSc Chemistry
8.	CHANDRAKUMAR R chandraag25@gmail.com +91-8431747814	MSc Chemistry
9.	KAUSHIK DAS 360kaushik@gmail.com 6002234193	M.Sc. (Biotechnology)
10.	SHREYA shreyamanohara10@gmail.com +917994797449	M.Sc CHEM
11.	DIVYA DR +91-7204748126 divyadr.info@gmail.com	MSc Chemistry
12.	Khitish 8249872698 khitismoha650@gmail.com	MSc Polymer Odisha
13.	Rajani Rajan Burud burud.rajani07@gmail.com	MSc Biotechnology

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14.	D.HARISH REDDY, MSc hari88674275@gmail.com, 6361555412	MSc Environmental
15.	JASWANTH MAMIDI +91 8309828195 Jaswanth0112@gmail.com	Btech Mechanical
16.	Arvind Manikandan 09818936883 rnayak@amity.edu	BTech Nanotechnology MSc Nanoscience
17.	PATILPRITEE ANANDA 918669706194 priteepatil2001@gmail.com	BSC Nanoscience MSC Nanoscience
18.	LAVANYA B 9148828351 lavanyachowdary2802@gmail.com	B.E Biotechnology M.Tech Biotechnology
19.	SOWMYA H. R sowmyahr06@gmail.com 9844407898	B.Sc Chemistry,Zoology M.Sc Chemistry
20.	TABISH ALI AFSAR ALI QUAZI 919307866508 kazitabish6@gmail.com	BSC Biotechnology Msc Biotechnology

Syllabus for Written Test:

1. Basic principles and applications of quantum mechanics: particle in one dimensional box, hydrogen atom, angular momentum.
2. Chemical kinetics: order, molecularity, methods to determine order of reaction using integrated rate equation, zero, first, second and half integral order reactions, determining the order- graphical method, half-life method, differential method, effect of temperature on reaction rate, Arrhenius equation, related numericals.
3. Basics of atomic structure: electronic configuration, shapes of orbitals, hydrogen atom spectra.
4. Electrolytic conductance: Electrolytic conductance, specific and equivalent conductance, variation of equivalent conductance with concentration, Kohlrausch's law and its applications.
5. Thermodynamics: Zero, first, second and third law of thermodynamics- enthalpy, entropy, free energy and their dependence on pressure and temperature.
6. Surface Chemistry: adsorption, physisorption and chemisorption, Freundlich and Langmuir adsorption isotherms, surface area determination.
7. Phase rule: Definitions, Gibb's phase rule, one component system (moderate pressure only) for sulphur and water system, two component system for silver-lead and zinc-cadmium.
10. Electrochemical cells: Reversible and irreversible cells, EMF and its measurements, standard cells, cell reaction and EMF, single electrode potential and its calculation, calculation of cell EMF, thermodynamics of cell EMF, types of electrodes, classification of electrochemical cells with and without transference, applications of EMF measurement i) Solubility product of sparingly soluble salt, ii) Determination of pH, iii) Potentiometric titration.
11. Photochemistry: Introduction, thermal reactions and photochemical reactions, laws of photochemistry, quantum yield, measurement of quantum yield, types of photochemical reactions, photosynthesis, photolysis, photocatalysis, photosensitization, photophysical
- 12) Fundamental of Chemical Engineering, Mass Balance, Heat Balance, Momentum Balance.

SD/-

Prof. (Dr.) P E JagadeeshBabu (PI)