NATIONAL INSTITUTE OF TECHNOLOGY TIRUCHIRAPPALLI
DEPARTMENT OF ENERGY AND ENVIRONMENT (DEE)
Ph.D. Admission – Jan. 2020

List of shortlisted Candidates for the Written Test

Written test date: 05th December, 2019 (4.30 pm to 6.30 pm)
Venue: NIT-Tiruchirappalli *(Please visit www.nitt.edu for updates)*

1. Part-time: On-campus

S.NO.	APPLICATION NO.	REG. NO. assigned by the department	FULL NAME
1	PhD/3616	EN01	CHITHRA M
2	PhD/4592*	EN02	ALTAMASH MUSTAFA*
3	PhD/4812	EN03	BARKAVI
4	PhD/4880	EN04	BALASUNDARAM P
5	PhD/4928**	EN05	MANIKANDAN**

** subject to the condition that the candidate produces a certificate from an external guide working in the same institute, where he is currently employed.*
***subject to the condition that the candidate produces "form3: no objection certificate" from the present employer, at the time of written test.*

2. Part-time: External

S.NO.	APPLICATION NO.	REG. NO. assigned by the department	FULL NAME
1	PhD/4367	EN06	ILAIYARAJA M
2	PhD/4372	EN07	THENNAVARAJAN S
3	PhD/4841	EN08	PURUSHOTTAM LAL
4	PhD/4069	EN09	S VIJAY ANAND RAJ
5	PhD/4653	EN10	ARAVINDHAN D

Note: Candidates are required to produce all the certificates in original for verification, during the interview.

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Syllabus For DEE – Ph.D. Written Test Jan 2020 Session

1. Mathematics: algebra, Differential and Integral calculus, Laplace transforms, basic numerical techniques, Basics of statistics
2. Heat Transfer: Conduction, convection and radiation, heat transfer coefficients, steady and unsteady heat conduction, boiling, condensation and evaporation; types of heat exchangers and evaporators and their design.
3. Mass Transfer: Fick's laws, molecular diffusion in fluids, mass transfer coefficients, Mass transfer theories; momentum, Analogies, stage wise and continuous contacting and stage efficiencies; HTU & NTU concepts design and operation of equipment for distillation, absorption, leaching, liquid-liquid extraction, drying, humidification, dehumidification and adsorption.
4. Fluid Mechanics: Fluid statics, Newtonian and non-Newtonian fluids, Bernoulli equation, Macroscopic friction factors, energy balance, dimensional analysis, shell balances, flow through pipeline systems, flow meters, pumps and compressors, packed and fluidized beds
5. Basics of Electrical Engineering
6. Wind Energy: Wind energy basics, wind energy generators
7. Solar energy.: Basics of solar energy, types of collectors, Applications of solar energy for cooling and heating
8. Fuel cells, their types and applications
9. Air Pollution.: Types of pollutants, their sources and impacts, air pollution meteorology, air pollution control, air quality standards and limits
10. Water Pollution: Quality standards, basic unit processes and operations for water treatment. Drinking water standards, water requirements, Primary, secondary and tertiary treatment of wastewater, sludge disposal, effluent discharge standards.
11. Bio process engineering and down-stream processing.

Dr. N. Anantharaman
HoD/DEE