RAJIV GANDHI INSTITUTE OF PETROLEUM TECHNOLOGY, JAIS, AMETHI

(An Institution of National Importance Established under the Act of Parliament)

List of short-listed candidates for Interview and/or written test for possible admission in PhD. Programme of **Department of Petroleum Engineering & Geoengineering** for Odd Semester, Academic Session 2021-22

Category-Wise:

A.) Supernumerary

S.No.	Name	Registration No.
1)	Anuj Singh	2117172
2)	Divyanshoo Singh	2117111
3)	Akash Rajpoot	2117516
4)	Adarsh Shukla	2115698
5)	Anjanay Pandey	2117512
6)	Rishabh Tripathi	2115862
7)	Romy Agrawal	2117477

B.) National Scholarship

S.No.	Name	Registration No.
1)	Ram Prakash Khemada	2117420

C.) Part-Time

S.No.	Name	Registration No.
1)	Deep Kumar	2116267
2)	Satya Prakash Pandey	2115954
3)	Vinod Yadav	2116447
4)	Sharad Ashok Agarwal	2115948

D.) Regular Full Time:

S.No.	Name	Registration No.
1)	Alpana Singh	2116709
2)	Amit Kumar	2116105
3)	Anil	2115868
4)	Anirudh Bardhan	2116220
5)	Arvind Saroj	2117321
6)	Atul Kumar Karna	2117232
7)	Ayush Chandra	2116138
8)	Baldeo Rajak	2116641
9)	Har Govind	2116962
10)	Kaushal Kishor	2117014
11)	Krishna Kanhaiya Singh	2116866
12)	Krishna Kumar Yadav	2117426
13)	Kumar Nilankar	2117643
14)	Pankaj Kumar Jaiswal	2117129
15)	Rajnish Kumar Maurya	2117579
16)	Sanjeev Singh	2117164

17)	Vikas Shukla	2117015
18)	Vikram Kumar	2115764
19)	Vishal Dhar	2117353

The above short listing has been done on the basis of information provided by the applicant. If at any stage the information provided by the applicant is found incorrect, the application is liable to rejection.

Applicants who have qualifying degree from CFI/CFTI with CPI of 8.00 or above (on a 10.0 point scale) (supernumerary candidates), possessing external fellowship such as CSIR JRF, UGC JRF, DST INSPIRE etc., in part time and full time external category will be interviewed on 22nd July 2021 between 11:30-1:30 PM for possible selection into the PhD programme.

The candidates in supernumerary category if fail to get selected in the interview will be evaluated under regular procedure by appearing for written test on 23rd July 2021 at 9:30-10:30 AM

Other regular shortlisted candidates will appear for written test on 23rd July 2021 at 9:30-10:30 AM. The Candidates those will qualify the written test will appear in the interview on 23rd July 2021 between 11:30-1:30 PM & 2:30 PM onwards for possible selection to PhD programme. The final selection will be subjected to performances in GATE Score, written test & interview.

Syllabus of Written Test & Interview

Petroleum Engg.

Fluid Mechanics, Heat and Mass Transfer, Petro physical properties of reservoir rock, PVT analysis, Thermodynamics of reservoir fluids, Material and Energy balance for oil and gas reservoir, Decline curve analysis, Fractional flow, Enhanced oil recovery, Diffusivity equation, Well bore storage, Pressure build up and draw down test, DST, Type curves, Gas well testing, Drilling methods, Rig operating systems, drilling fluids, cementing operation, drilling bits, drill string and casing design, well control, hole problems, directional drilling, formation damage, Well completion and stimulation techniques, Artificial lift techniques, IPR and TPR, Nodal analysis, Surface production operations and equipment design, Well completion design, Fluid flow operations, Flow assurance, Rheology, Sand control, CBM, Gas hydrates, Shale oil and Gas, Heavy oil, Reservoir modelling and simulation, Natural gas engineering, Pipeline design, Petroleum economics.

Geophysics Syllabus:

1. *Basic principles of geophysical exploration.*

2. *Seismic Methods and Rock Physics* : Basic of Seismic wave propagation, Elementary principle of reflection and refraction methods, two layer reflection and refraction problems including inclined layer, fundamentals of conventional seismic instruments, fan shooting, profile shooting, continuous profiling and correlation methods of surveying. Definitions and methods of rock physics, Elasticity, Hooke's law, Reflectivity and Transmittivity, Static and dynamic moduli, Effect of pore fluid of rock's seismic properties, fluid substitution, Importance of Vp/Vs and Poisson's ratio. Effect of porosity on rock's elasticity Porosity-velocity models. Porosity-

velocity-texture models, Sand-shale mixtures and their elastic signatures, AVO etc.

3. *Seismology*: Introduction to earthquake phenomena, concept of focus, focal depth, epicentre, great Indian earthquakes, intensity and magnitude scales and energy of earthquakes, foreshocks and aftershocks, elastic rebound theory, seismicity of India.

4. *Well Logging*: Definition, importance; rock composition- matrix, shale, silt, clay and fluids; porosity of rocks-classification, packing of grains; permeability- absolute, effective and relative; permeability associated with fractures and solution channels; resistivities of rocks; relationship between permeability and porosity; resistivity index and its relation with water saturation. Classification of log measurements, borehole environment, logging equipment, Logging tools: Resistivity, Self-Potential, Nuclear Logging, Sonic Log, CNL, SNP; Miscellaneous tools: Dipmeter, temperature, caliper, repeat formation tester, side wall coring tools.

5. *Gravity Method, Magnetic and Electrical method*: Stable and unstable gravimeters, field procedure and reduction of gravity data. Schmidt type magnetometers, field due to point pole and dipole, field practices and corrections. Elements of SP, IP and resistivity methods, Wenner and Schlumberger configurations, methods of resistivity profiling and sounding.

Geology Syllabus:

Earth and Planetary system - size, shape, internal structure and composition of the earth; concept of isostasy; continental drift; plate tectonics –relationship with earthquakes, volcanism and mountain building; continental and oceanic crust – composition, structure and thickness. Geomorphology-weathering and soil formation; landforms created by river, wind, glacier, ocean and volcanoes. Engineering Geology and Structural Geology-physical properties of rocks, stress, strain, poison ratio, modulus of elasticity and material response; brittle and ductile deformation; natural hazards, nomenclature and classification of folds and faults, geometry and genesis of folds, faults, joints and unconformities; cleavage, schistosity and lineation Igneous Rocks-classification, forms and textures; magmatic differentiation. Sedimentary rocks – texture and structure; sedimentary processes and environments, provenance. Metamorphic rocks – structures and textures. Crystallography- symmetry, forms and twinning; physical and optical properties of rock -forming minerals. Indian stratigraphy – Geological time scale, Precambrian and Phanerozoic, overview of Himalayan Geology, Coal and petroleum geology-origin and distribution of coal and petroleum in India, unconventional energy resources of India, fossil and nuclear fuel deposits in India. Hydrogeology- hydrological cycles, different forms of water, Darcy’s Law, and water quality.