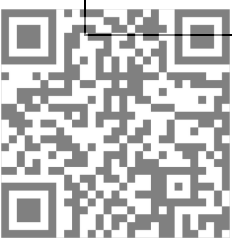


PLANET GEOLOGY

ALL INDIA TEST SERIES

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TEST NO./DATE	TYPE OF TEST	TOPICS	SYLLABUS
Test # 1 01.09.2021	Subject	Geophysics	Principles and applications of gravity, magnetic, electrical, electromagnetic, seismic and radiometric methods of prospecting for oil, mineral and ground water; introductory well logging.
Test # 2 08.09.2021	Subject	Geodynamics, Structural Geology	Plate motions, driving mechanisms, plate boundaries, supercontinent cycles. Forces and mechanism of rock deformation; primary and secondary structures; geometry and genesis of planar and linear structures (bedding, cleavage, schistosity, lineation); folds, faults, joints and unconformities; Stereographic projection; shear zones, thrusts and superposed folding; basement-cover relationship. Interpretation of geological maps.
Test # 3 15.09.2021	Subject	Geochemistry	Cosmic abundance of elements; meteorites; geochemical evolution of the earth; geochemical cycles; distribution of major, minor and trace elements in crust and mantle; elements of high temperature and low temperature geochemical thermodynamics; isotopic evolution of the crust and the mantle, mantle reservoirs; geochemistry of water and water-rock interaction.
Test # 4 22.09.2021	Subject	Geomorphology and Remote Sensing + GIS	Geomorphic processes and agents; development and evolution of landforms in continental and oceanic settings; tectonic geomorphology. Energy sources and radiation principles, atmospheric absorption, interaction of energy with earth's surface, aerial-photo interpretation, multispectral remote sensing in visible, infrared, thermal IR and microwave regions, digital processing of satellite images. GIS – basic concepts, raster and vector mode operations.
29.09.2021	BREAK		
Test # 5 06.10.2021	Sectional	All Previous Four Subjects	Syllabus of Previous 4 Subjects
Test # 6 13.10.2021	Subject	Paleontology	Diversity of life through time, mass extinctions- causes and effects; taphonomy - processes of fossilization. Taxonomy. Morphology and functional morphology of invertebrates (bivalves, brachiopods, gastropods, echinoids, ammonites); microfossils (foraminifera, ostracoda, conodonts, bryozoa); Vertebrate paleontology (Equus, Proboscidea, Human); Paleobotany (plant, spores, pollens). Basic concepts of ecology/paleoecology; classification - ecological and taxonomic schemes (diversity and richness). Fossils and paleoenvironments
Test # 7 19.10.2021	Subject	Hydrogeology and Engineering Geology	Groundwater flow and exploration, well hydraulics and water quality. Physico-mechanical properties of rocks and soils; rock index tests; Rock failure criteria (Mohr-Coulomb, Griffith and Hoek-Brown criteria); shear strength of rock discontinuities; rock mass classifications (RMR and Q Systems); in-situ stresses; rocks as construction materials; geological factors in the construction of engineering structures including dams, tunnels and excavation sites. Analysis of slope stability.
Test # 8 26.10.2021	Subject	Sedimentology and Stratigraphy Principles	Texture, structure and sedimentary processes; petrology of common sedimentary rocks; Sedimentary facies and environments, cyclicities in sedimentary succession; provenance and basin analysis. Important sedimentary basins of India.



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			Principles of stratigraphy and concepts of correlation; Lithostratigraphy, biostratigraphy and chronostratigraphy. Principles of sequence stratigraphy and applications.
Test # 9 02.11.2021	Subject	Stratigraphy of India, Earth and Planetary System, Heat Flow Inside Earth	Stratigraphy of peninsular and extra-peninsular India. Boundary problems in Indian stratigraphy.
09.11.2021	BREAK		
Test # 10 16.11.2021	Sectional	All Previous Four Subjects	Syllabus of Previous 4 Subjects
Test # 11 25.11.2021	Subject	Igneous and Metamorphic Petrology	Classification, forms, textures and genesis of common igneous rocks; magmatic differentiation; binary and ternary phase diagrams; major and trace elements as monitors of partial melting and magma evolutionary processes. Mantle plumes, hotspots and large igneous provinces. Structures and textures of metamorphic rocks. Physico-chemical conditions of metamorphism and concept of metamorphic facies, grade and baric types; chemographic projections; metamorphism of pelitic, mafic and impure carbonate rocks; role of bulk composition including fluids in metamorphism; thermobarometry and metamorphic P-T-t paths, and their tectonic significance.
Test # 12 1.12.2021	Subject	Mineralogy and Crystallography	Elements of crystal symmetry, form and twinning; crystallographic projection; crystal chemistry; classification of minerals, physical and optical properties of rock-forming minerals.
Test # 13 08.12.2021	Subject	Resource Geology	Ore-mineralogy; ore forming processes vis-à-vis ore-rock association (magmatic, hydrothermal, sedimentary, supergene and metamorphogenic ores); fluid inclusions as ore genetic tools. Coal and petroleum geology; marine mineral resources. Prospecting and exploration of economic mineral deposits - sampling, ore reserve estimation, geostatistics, mining methods. Ore dressing and mineral economics. Distribution of mineral, fossil and nuclear fuel deposits in India.
Test # 14 15.12.2021	Subject	GATE 2012 - GATE 2016 Papers	All questions and their variations from the specified GATE papers
Test # 15 22.12.2021	Sectional	GATE 2017 – GATE 2021 Papers	All questions and their variations from the specified GATE papers
Test # 16 29.12.2021	Full Length	All Topics	Full Syllabus
Test # 17 05.01.2021	Full Length	All Topics	Full Syllabus
Test # 18 11.01.2021	Full Length	All Topics	Full Syllabus

