

# KAKATIYA UNIVERSITY, WARANGAL -TELANGANA

## Syllabus for Ph.D Entrance Examination in GEOLOGY

### UNIT-1

Classification of crystals into 7 systems and study of their normal class, twinning in crystals.

Nicol prism, indicatrix, optic sign.

Silicate structures, solid solution, polymorphism and isomorphism, mineral groups, pyroxene, amphibole, feldspar and silica.

Earthquakes- causes and its effects, Volcanoes-origin and types. mechanical weathering and chemical weathering.

Concepts of geomorphology. Fluvial cycle, karst topography, arid cycle.

### UNIT-II

Classification of igneous rocks (IUGS), textures and structures of igneous rocks

Diopside-Albite-Anorthite system, Bowens reaction series

Lamprophyres, Kimberlites, Basalts, Granites and Carbonatites.

Classification of sedimentary rocks, structures and textures of sedimentary rocks. sedimentary environments.

Types and agents of metamorphism, structures and textures of metamorphic rocks, Granulites, Eclogites and Green schist facies.

### UNIT-III

Principles of stratigraphy. classification and nomenclature, geological time-scale.

Morphology and geological distribution of foraminifera, Ostracoda and phylum Mollusca. evolution of man and elephant.


Stratigraphic succession and mineral wealth of Archaean, Cuddapah's and Gondwana.

Principles of stress and strain ellipsoid.

Classification and description of folds, faults and joints.

Structure and tectonics of India, Interior of the earth, plate tectonics.

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#### UNIT-IV

Origin and migration of petroleum and natural gas. structural and stratigraphic traps. petroliferous basins of India, origin and types of Coal.

Classification of mineral deposits, nature and migration of ore-bearing fluids, magmatic and hydrothermal deposits. oxidation and supergene sulphide enrichment deposits. metallogenic epochs and provinces of India.

Hydrological cycle, vertical distribution of ground water, ground water provinces of India, ground water exploration, water quality and pollution, ground water management, rain water harvesting methods.

Remote sensing and its applications in geoscience.

#### UNIT-V


Mining methods, mineral beneficiation. mineral economics, national mineral policy.

Types of mineral exploration methods, mineral deposits, occurrence, origin and distribution of Gold, Iron, Aluminum and Copper.

Application of GIS in Geo-Science.

Mining and its impact on environment conservation and management.

Role of geologist in civil engineering. geological considerations for geotechnical constructions.

  
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## Model Question Paper

FACULTY OF SCIENCE

PhD Entrance Examination

**GEOLOGY**

Time: 3 Hours

Marks: 100

### Instructions:

Each question carries one mark.

Choose correct answer to the following questions and darken, with HB pencil, the corresponding digit 1,2,3, or 4 in the circle pertaining to the question number concerned in the OMR Answer sheet, separately supplied to you.

1) Monazite is radioactive because of the presence of  
a) Plutonium b) Radium c) Thorium d) All of the above

2) The earthquake wave responsible for the particles to vibrate too and fro in the direction of propagation is  
a) P waves b) S waves c) L waves d) Surface waves

**Note: A balanced question paper should be set by picking 20 objective type questions from each unit.**

**The medium of eligibility test is English.**

  
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