

SYLLABI FOR B.SC GEOLOGY THIRD YEAR AS PER OLD PATTERN

**INSTRUCTORS TO PAPER SETTERS
(B.Sc. Geology - Semester V to Semester VI)**

1. Each theory paper comprises 4 units.
2. Nine questions will be set in all out of which the examinees will attempt only Five questions. First question will be compulsory; it will be covering the entire syllabus, and be of short answer type. Out of remaining 8 questions the examinees will answer one question from each unit.
3. The examiner will set Two questions from each of the four units out of which one question shall be of short answer type.

B.Sc THIRD YEAR (GEOLOGY) V SEMESTER

U GEOL-501 Economic Geology

Max. Marks: 45+5*

Time: 3 hrs.

***Internal**

Unit-I

Elementary concept of the following ore forming processes: magmatic, Hydrothermal, Sedimentary , Residual and mechanical concentration, Oxidation and supergene enrichment.

Unit -II

The study of physical properties and uses of the ores of the following with reference to Indian occurrences: Iron, manganese, aluminum, copper, lead, zinc, tin, tungsten, molybdenum, uranium thorium, chromium, nickel, cobalt, antimony, gold, silver and platinum.

Unit-III

Energy mineral- Petroleum, its origin, migration, accumulation and geological occurrences in India.

Unit-IV

Energy minerals- coal and atomic minerals, their origin and geological occurrences in India.

Books recommended :-

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| 1. India's Mineral Resources | S.Krishnaswami |
| 2. Industrial Mineral and rocks of India. | S.Deb |
| 3. Economic mineral deposits | A.M.Bateman |
| 4. Ore deposits of India | Gokhale and Rao |

B.Sc THIRD YEAR (GEOLOGY) V SEMESTER

U GEOL-502 Exploration Geology & Remote Sensing

Max. Marks: 45+5*

Time: 3 hrs.

***Internal**

Unit-I

Surface expression and indications of economic deposits-Old working, gossans and cap rocks: geobotanical and geochemical guides.

Unit-II

Techniques of surface and subsurface sampling (pitting, trenching, drilling and delineation of anomalies with typical examples.

Unit-III

Elementary idea of Geophysical investigations-electrical magnetic, gravity, seismic and radioactive. Elementary idea about geophysical well logging.

Unit-IV

Remote Sensing techniques to delineate geomorphic, lithological , Structural features and identification of various types of earth resources.

Books recommended:-

1.Mining Geology

R.M.Arogyaswamy

2. Practical manual of exploration and

S.K.Babu

Prospecting

3.Principles and practicals of mineral

D.K.Sinha

Exploration

4.Elements of prospecting and

Bagchi, Sen Gupta and Rao

Exploration

5.Principles of application of

S.N.Pandey

Photogeology

6.Photogeology

Miller and Miller

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| 3. Engineering Geology | Krynine and Judd |
| 4. Engineering Geology | Blyth |
| 5. Soil Mechanics | T.W.Lambe and
R. Whitman |

B.Sc THIRD YEAR (GEOLOGY) VI SEMESTER
U GEOL-602 Hydrogeology and Environmental Geology

Max. Marks: 45+5*

Time: 3 hrs.

***Internal**

Unit-I

Occurrence of groundwater, hydrologic cycle, groundwater aquifers and their parameters. Groundwater quality criteria for different uses.

Unit-II

Conjunctive use and groundwater management, water-logging and relative problems; exploration and evaluation of groundwater potential.

Unit-III

Basic principles of environment and ecosystem in relation to geology. Anthropogenic activities and their impact on environment. Environment energy projects and natural hazards with typical examples.

Unit-IV

Atmosphere-its composition and structure, increasing CO₂ trend and greenhouse gases, greenhouse impacts on global environment.

Books recommended

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| 1. Groundwater Hydrology | D.K Toad |
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| 2. Groundwater | Cheery and Greeze |
| 3. Hydrogeology
Dewiest | S.N Davis, and R.J.M. |
| 4. Groundwater resources Evolution | W.C Walton |
| 5. Hydrology | C.Meinzier |
| 6. Hand book of Applied Hydrology | Chow |
| 7. Environmental Geology | L. Lindgrein |