

Assam Higher Secondary Education Council (AHSEC)

2nd Year Syllabus

GEOLOGY

SYLLABUS FOR SECONDARY COURSE

CLASS XII

Objectives :

1. To explain the basic concept of Geology.
2. To acquire the fundamental knowledge of different branches of Geology with their specific importance.
3. To develop an interest to nature and its processes.
4. To develop interest towards the constitution of the Earth's crust.
5. To increase the awareness of the problems of environment due to mining and industrial activity and its remedial measures.
6. To develop an ability to use and interpret a geological map.
7. To know the importance of Geology contributing towards the national development especially the Engineering Projects.

SYLLABUS FOR HIGHER SECONDARY FINAL YEAR COURSE

One Paper **Time : Three Hours** **Marks 70**

Unitwise Distribution of Marks and Periods :

Unit No.	Title	Marks	Periods
Unit-1	Petrology	20	35
Unit-2	Indian Stratigraphy	15	25
Unit-3	Economic geology	15	30
Unit-4	Ground Water and Engineering geology	10	25
Unit-5	Palaeontology	10	25
	Total	**70**	**140**

Unit wise Distribution of Course contents :

Unit-1 Petrology :

Rocks, its definition and types (igneous, sedimentary and metamorphic), their distinguishing characters.

(i) Igneous: Its definition and composition, Forms of igneous rock. Differentiation of magma. Texture and structure of igneous rock. Texture (Porphyritic, Poikilitic, Ophitic, Coarse, Fine and Glassy). Structure (columnar, flow, pillow, vesicular, sheet, amygdaloidal). Classification of igneous rocks on the basis of texture, mineralogical composition and color. Study of the following rocks with respect to their mineralogical composition and texture:-Granite, Pegmatite, Rhyolite, Gabbro, Dolerite, Basalt.

(ii) Sedimentary: Texture and structure of sedimentary rocks. Processes of formation of sedimentary rocks. Study of the following rocks:- Conglomerate, Grit, Sandstone, Shale, Lime stone.

(iii) Metamorphic: Definition, agents and types of metamorphism. Depth zones of metamorphism (epizone, mesozone, katazone). Study of the following rocks with respect to their mineralogical composition and texture and structure:- Schist, Gneiss, Marble, Slate and Quartzite.

Unit-2 : Indian Stratigraphy :

Precambrian and Mesozoic stratigraphy ofN.E. India. Precambrian of Kamataka and Vindhyan. An outline of the tertiary stratigraphy of the N.E. with emphasis on its lithology, paleontology and economic importance.

Unit-3 : Economic Geology :

Definition of ore. Elementary idea of the processes of formation of mineral deposits. Origin and mode of occurence of coal and petroleum. Mode of occurence, distribution in India and uses of the following in the N.E.- Coal, Petroleum, Silliminite, Limestone.

Unit-4 : Ground Water and Engineering Geology :

Ground Water : Definition, elementary idea of hydrologic cycle, porosity, permeability, aquifers, water table.

Engineering geology : Selection of bridge site and Dam site, Flood- its geological causes, prevention

with a view to proper utility.

Unit-5 : PALEONTOLOGY :

Fossil : Definition, mode of preservation, uses. An outline of the important forms of life (plant and animal) through geological ages. A brief morphological study of the phylum/class Brachiopoda, Lamellibranchia and Gastropoda.

SYLLABUS FOR GEOLOGY PRACTICAL

Total Marks- 30

Unit-1 : Crystallography : **Marks 3**

Symmetry elements, Identification of the crystal forms of the normal class of the isometric, tetragonal and hexagonal system with their general symbols.

Unit-2 : Measurements : **Marks 4**

Measurement of specific gravity of minerals. Determination of hardness of minerals using Moh's scale of hardness.

Unit-3 : Identification : **Marks 6**

Identification of the following Minerals :

Quartz, Orthoclase, Microcline, Garnet, Calcite, Muscovite, Biotite, Tourmaline, Galena, Haematite, Pyrite, Magnetite, Malachite, Bauxite, Silliminite, Asbestos, Cuprite, Gypsum, Hornblende, Kyanite.

Identification of the following Rocks : **Marks 6**

Granite, Basalt, Pegmatite, Dolerite, Sandstone, Limestone, Conglomerate, Quartzite, Marble, Slate, Granite-gneiss, Biotite-schist, Muscovite-Schist, Amphibolites.

Unit·4 : Drawing and interpretation of simple Geologic Maps. **Marks 8**

Unit-5 : Specimen collection and Laboratory note book. **Marks 3**

Total Periods 50 each of 45 minutes duration.

Recommended Books :

1. Bhu Bigyan (Geology) by Dr. Chatur Bhuj Pathak , publisher – Ashok Book Stall, Pan bazar Guwahati, Assam. (Assamese medium book which include: Unit – 1, Unit – 2, Unit – 3, Unit – 4,& Unit – 5)

2. A TEXTBOOK OF GEOLOGY by Pradip Kumar Mukharjee, published by S. Bhattacharjee for The World Press Private Ltd.
(English medium book which include: Unit – 1, Unit – 2, Unit – 3, Unit – 4, Unit – 5 & PRACTICALS).

3. PRINCIPLES OF ENGINEERING GEOLOGY by K.M. Bangar, published by Standard publishers and Distributors. 1705/B, Delhi – 110006.
(English medium book which include: Unit – 1, Unit – 3, Unit – 3, Unit – 4, & for PRACTICALS of Unit – 1, Unit – 3, Unit - 4).

4. ENGINEERING and GENERAL GEOLOGY by Parbin Singh – published by S.K. Kataria & Sons 4885/109, Prakash Mahal. Daryaganj, New Delhi.
(English medium book which include: Unit – 1, Unit – 2, Unit – 3, Unit – 4 and for PRACTICALS of Unit -1, Unit - 3)

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Study Materials

aglasem.com

Model Papers

Sample Papers

Half Yearly Sample Papers

Important Resources

Periodic Table

Writing Skills / Formats

Maps of India / World

Notes

- [ ] Class 6 Notes
- [ ] Class 7 Notes
- [ ] Class 8 Notes
- [ ] Class 9 Notes
- [ ] Class 10 Notes
- [ ] Class 11 Notes
- [ ] Class 12 Notes

Books and Solutions

NCERT Books

NCERT Book Solutions

HC Verma Chapter Wise Solutions

RD Sharma Solutions

CGBSE Solutions