

**Group A: (Stratigraphy)**

**Unit I: General stratigraphy and Precambrian stratigraphy of India**

Principles of stratigraphy. Stratigraphic units: Time - units, chrono - stratigraphic units, litho - stratigraphic units and bio-stratigraphic units

Correlation, litho-, bio- and chrono-stratigraphic correlation. Principles of radiometric dating of rocks.

Precambrian rocks of Singhbhum- Orissa, Karnataka, Rajasthan, Meghalaya-Assam, Cuddapah and Vindhyan Super-groups

**Unit II: Indian stratigraphy (Phanerozoic eon)**

Palaeozoic rocks of Kashmir. Triassic rocks of Spiti valley, Jurassic rocks of Cutch, , Gondwana Super-group of Peninsular India, Deccan traps, Cretaceous rocks of Tiruchirapalli and Narmada valley , Lithostratigraphy of Meghalaya, Siwalik Group, Tertiary rocks of North-East India

**Group B: (Palaeontology)**

**Unit III: General palaeontology:**

Scope and subdivisions of palaeontology. Fossils, fossilization and uses of fossils. Micro – palaeontology, types of micro fossils and utility.

A study of the evolutionary trends in trilobites and Equidae. Siwalik mammals of India

**Unit IV: Invertebrate fossils and plant fossils:**

A general study of the morphological characters and geological distribution of the following- brachiopods, mollusks (bivalves, gastropods and cephalopods), trilobites; graptoloidea, foraminifera and echinoidea.

Idea of Pre-Gondwana flora, Gondwana flora, Post-Gondwana flora of India. A study of the morphological characters and geological distribution of *Glossopteris*, *Gangamopteris*, *Vertebraria*, *Ptilophyllum*.

**Reading List**

1. Faure, E.(1986) *Isotope Geology*, John Wiley
2. Krishnan, M.S.(1996) *Geology of India and Burma*, CBS
3. Kumar, R.(1996) *Fundamentals of Historical Geology and Stratigraphy of India*, Wiley Eastern
4. Shrock, R.R. and Twenhofel,(1987) *W. Invertebrate Paleontology*, CBS
5. Wadia, D.N. *Geology of India*,(1983)McMillan
6. Weller, J.M. (1989)*Stratigraphic Principles and Practice*, Universal, New Delhi
7. Woods, H.(1985)*Invertebrate Paleontology*, CBS

**Paper: GELH 402(PRACTICAL): Palaeontology and Stratigraphy**

**(Contact hours: 48)**

**Max. Marks: 25**

**Time: 4 hours**

**1. Stratigraphy**

**Marks: 4**

Study of the rocks from important stratigraphic horizons of the India (Precambrian rocks of Indian Peninsular, Vindhyan Supergroup, North-East India)

**2. Palaeontology**

**Marks: 2 x 5 = 10**

Identification and study of the following fossils:

*Micraster, Clypeaster, Hemiaster, Terebratula, Rhynchonella, Productus, Spirifer, Nucula, Lima, Pecten, Spondylus, Trigonina, Cardita, Ostrea, Conus, Cypraea, Natica, Cerithium, Murex, Physa, Turritella, Fusus, Voluta, Nautilus, Baculites, Belemnites, Perisphinctes, Ceratites, Zaphrentis, Phacops, Nummulites, Alveolina, Discocyclus, Glossoscolecus, Gangamopteris, Vertebraria and Ptillophyllum.*

**3. Drawing and labeling of the important fossils as mentioned above.**

**Marks: 3**

Arrangement of different fossils as mentioned above in stratigraphic order.

**Marks: 3**

**4. Laboratory notebook and viva-voce**

**Marks: 2+3=5**

**Reading List:**

1. Krishnan, M.S(1996) *Geology of India and Burma*, CBS
2. Sen, A.K.(1995) *Laboratory Manual of Geology*, Modern Book agency, Calcutta
3. Woods, H(1985) *Invertebrate Paleontology*, CBS