

B.Sc. Geology- III Year
Semester – V
Paper – V - (A) Stratigraphy, Indian Geology and Palaeontology
(4 hrs/week) (DSE-5 – Elective I) Credits-4 (60 hours)

Unit-1:

Definition of stratigraphy, principles of stratigraphy, lithostratigraphy, standard geological time scale. physiographic divisions of india with their stratigraphic and structural characteristics. brief study of type area, distribution in india, lithology, age, fossil content and economic importance of the system, dharwar system, cuddapah system, vindhyana system, kurnool system and gondwana system.

Unit-II:

Brief study of type area, distribution in India, lithology, age, fossil content and economic importance of the systems triassic of spiti, jurassic of kutch, cretaceous of tiruchirapalli, deccan traps and their age, siwaliks with vertebrate fossils; geology of Telangana. stratigraphic contact boundaries between archaean and proterozoic and cretaceous and tertiary ; geology of Telangana state.

Unit-III:

Definition of palaeontology, conditions of fossilization, modes of preservation and uses of fossils. classification morphological characters and geological distribution of: phylum protozoa, phylum coelenterata, phylum echinodermata, and phylum arthropoda. study of the following fossils with respect to their classification, morphology and geological distribution: calymene, paradoxides, corals and graptolites

Unit-IV:

Classification morphological characters and geological distribution of: phylum brachiopod, phylum mollusca (lamellibranchia, gastropoda and cephalopoda); study of the following fossils with respect to their classification, morphology and geological distribution: cidaris, micraster, holaster, hemiaster, terebratulina, spirifer, rhynchonella, productus, turritella, murex, natica, voluta, pecten. gryphaea, arca, cardita, exogyra, nautilus, ammonoids, belemnites, ,, plant fossils - glossopteris, gangamopteris, ptilophyllum.

 

**B.Sc. Geology- III Year
Semester – V**

Paper – V - (A) Stratigraphy, Indian Geology and Palaeontology Practicals
(3 hrs/week) (DSE-5 – Elective -I) Credits-1 (45 hours)

1. Locating of different type areas and equivalents of systems or groups of India in the political map of India and study of their economic importance.
2. Preparation of stratigraphic columns.
3. Study of the classification, morphology, and geological distribution of the following invertebrate fossils with drawing - cidaris, micraster, holaster, hemiaster, terebratula, spirifer, rhynchonella, productus, turritella, murex, cypraea, natica, voluta, pecten. gryphaea, arca, cardita, exogyra, nautilus, ammonoids, bellemnites, calymene, paradoxide, corals and graptolites.
4. Study of the classification, morphology, and geological distribution of the following plant fossils with drawing drawing - glossopteris, gangamopteris, ptylophyllum.

Text books:

1. Geology of India and Burma, Krishnan, M. S. (1982) CBS Publishers, Delhi.
2. Fundamentals of historical Geology and stratigraphy of India-Ravindra Kumar.
3. Palaeontology-Invertebrate- Henry Woods

Reference books:

1. Unlocking the Stratigraphic Record. Doyle, P. & Bennett, M. R. (1996) John Wiley
2. Geology of India Volumes 1 & 2 , Ramakrishnan, M. & Vaidyanadhan, R. (2008), Geological society of India, Bangalore.
3. The making of India, Macmillan India Pvt. Ltd. Valdiya, K. S. (2010)
4. Principles of Paleontology Raup, D. M., Stanley, S. M., Freeman, W. H. (1971)
5. Invertebrate paleontology and evolution, Clarkson, E. N. K. (2012) 4th Edition by Blackwell Publishing.

Practical Model Paper

**B.Sc. (CBCS) - III Year Practical Examination
GEOLOGY
Semester-V : Paper V (A)
(Stratigraphy, Indian Geology and Palaeontology)
(DSE-5 – Elective- I)**

Time: 2 Hours

**Credits : 1
Max.Marks:25**

- 1) Locate the type area and equivalents of the Cuddapah System and add a note on the available economic important minerals in the given political map of India. (4 M)
- 2) Prepare the stratigraphic column of cuddapah basin. (4 M)
- 3) Identify the given invertebrate fossils 1-4 and write their classification morphology and age. (4x2= 8 M)
- 4) Identify the given plant fossils 5-6 and write their classification, morphology and age. (2x2=4 M)
- 5) Record & Viva (5 M)

**B.Sc. Geology- III Year
Semester – V
Paper – V (B) Environmental Geology**

(4 hrs/week)

(DSE-5 – Elective - II)

Credits-4 (60 hours)

Unit-I:

Scope of environmental geology – environmental awareness –urbanisation and its impact on environment, air, water, sound and land pollution, global warming and green house effect,

Unit – II:

Disaster management: Natural hazards - earth quakes, tsunamis, coastal erosion - protection and management, floods and landslides.

man made hazards - man as agent of mass wasting and land scarification.

Unit-III:

Geo technical constructions and its impact on environment - dams, highways, urbanisation.

mining and its impact on the environment – health hazards associated with mining –

mine waste disposal.

Unit-IV:

Waste disposal practices, recycling. role of geologist in environmental protection and planning. environment conservation and management, climate change and mitigation.

**B.Sc. Geology- III Year
Semester – V
Paper – V (B) Environmental Geology practicals**

(3 hrs/week)

(DSE-5 – Elective - II)

Credits-3 (45 hours)

1. Study of maps of seismic zones, earthquake-prone, landslide-prone and flood-prone areas in India.
2. Methods of water analyses for physical and chemical parameters.

Text Books:-

1. Strahler- Environmental Geology
2. Lundgren- Environmental Geology
3. Keller: Environmental Geology.
4. K.S. Valdiya. Environmental Geology



Reference books:

1. A Text Book of Environmental Geology- Purohit
2. Mining environment- Bharath B. Dhar
3. Impact of Mining on Environment Water Pollution – R. K. Sharam
4. Environmental Geology- Montaganery
5. Principles of Environmental Sciences- Cunningham.
6. Basic Environmental Technology –Nathanson
7. Environmental Sciences – Wright Nebel
8. Environmental Geography-Saxena
9. Environmental Impact Assessment –Bartiwal
10. A Text Book of Environmental Sciences- Subramanyan
11. Atmosphere, Weather and Climate- Sidhartha.

Practical Model Paper

**B.Sc. (CBCS) - III Year Practical Examination
GEOLOGY**

Semester-V : Paper V (B)
(Environmental Geology)
(DSE-5- Elective-II)

Time: 2 Hours

- 1) Identify and mark the seismic zones in the given map of India.
- 2) Analyse the given water sample and estimate the chemical parameters.
- 3) Record & Viva.

Credits : 1
Max.Marks:25
(10 M)
(10 M)
(5 M)


