

1. **Explain:** (A) Rock mass as material for construction. (07)
OR
 (A) Seismic zones of India. (07)
 (B) Landslides and their controlling measures. (07)
OR
 (B) Influence of geological conditions on foundation and design of buildings. (07)
2. **Describe:** (A) Geotechnical investigations of reservoirs. (07)
OR
 (A) Rock mass improvement techniques. (07)
 (B) Environmental impact assessment of industrial complexes. (07)
OR
 (B) Engineering classification of Soils. (07)
3. **Write notes:** (A) Distribution of marine microfossils and ocean sediments. (07)
OR
 (A) Oceanic circulation, waves and currents. (07)
 (B) Stratigraphy of deep sea deposits. (07)
OR
 (B) Tectonic history of the oceans. (07)
4. **Discuss:** (A) Applications of mathematics in geology. (07)
OR
 (A) The idea of probability, frequency and frequency distribution. (07)
 (B) Linear and multivariate regression. (07)
OR
 (B) Arithmetic and logarithmic scales. (07)
5. **Write answer in brief:**
1. Define terrain evaluation. (01)
 2. What is rock stress? (01)
 3. Define sliding. (01)
 4. Give the stages of geotechnical investigations. (01)
 5. Define silting. (01)
 6. What is soil mechanics? (01)
 7. What is environment impact assessment? (01)
 8. Define logging. (01)
 9. Define canyons with suitable examples. (01)
 10. Name two types of dams with example. (01)
 11. Draw a sketch of ocean morphology. (01)
 12. Name important marine microfossils. (01)
 13. Define t-test. (01)
 14. Give names of two statistical hypothesis. (01)

M.Sc. (Sem.-IV) Examination

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Geology

April-2017

Time : 3 Hours]

[Max. Marks : 70

- Q. 1. (A) Write a note on types of aquifers and discuss hydrological characteristics of aquifers. 07
- OR**
- (A) Explain the role of hydrological and run off cycles in the study of hydrogeology. 07
- (B) Discuss seismic method of groundwater exploration. 07
- OR**
- (B) Describe the chemical characteristics of Groundwater. 07
- Q. 2. (A) Discuss (1) hydrographs, (2) water table contour maps. 07
- OR**
- (A) Write a note on Darcy's law and its range of validity. 07
- (B) Describe well hydraulics. 07
- OR**
- (B) What is salinity ingress ? Discuss the steps to prevent it. 07
- Q. 3. (A) Write a note on groundwater occurrence in non-indurated sediments. 07
- OR**
- (A) Explain the occurrence of groundwater in arenaceous rocks with reference to porosity, permeability and well yields. 07
- (B) Discuss the problem of water resources management. 07
- OR**
- (B) What is judicious use of groundwater ? Explain the problem of over-exploitation and its mitigation. 07
- Q. 4. (A) Discuss magneto-telluric method of geophysical exploration. 07
- OR**
- (A) Explain geological and geochemical methods of exploration. 07
- (B) Describe levelling and contouring. 07
- OR**
- (B) Discuss the principles and methods of sampling and labelling. 07
- Q. 5. 1. Define fresh water, saline water and brine. 01
2. What is peizometric surface ? 01
3. Give uses of radio isotopes in groundwater studies. 01
4. Define arid zones and wet lands. 01
5. Name the types of hydrographs. 01
6. Explain hydrostratigraphic units. 01
7. Name few artificial recharge methods. 01
8. Give the chemical quality of water from volcanic rocks. 01
9. Why groundwater legislation is required ? 01
10. Give the use of Theodolite. 01
11. Define anomaly. 01
12. Give the unit of measurement of radioactive geophysical prospecting methods. 01
13. Name the equipments used to measure the radioactive element. 01
14. State the conditions for artesian wells. 01