

G-3/370/22

Roll No.

III Semester Examination, January 2022

M.Sc.

GEOLOGY

Paper IV

(Engineering Geology and Geotechnical Investigations)

Time : 3 Hours]

[Max. Marks : 80

Note : *All questions are compulsory. Question Paper comprises of 3 Sections. Section A is objective type/multiple choice questions with no internal choice. Section B is short answer type with internal choice. Section C is long answer type with internal choice.*

SECTION A

1×10=10

(Objective Type/Multiple Choice Questions)

1. What is the ultimate relationship of civil engineering to geology ? Give answer in two sentences.
2. Define compressive strength of rocks.
3. Give two desirable properties of concrete aggregates.
4. What do you mean by grouting ?

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5. What do you mean by multipurpose 'Dams'.
6. Give two examples of 'Dam failure'.
7. Define the Tunnels.
8. What do you mean by Tunnel support system.
9. Write down the types of Landslides.
10. What do you mean by Siesmotectonic Framework of India ?

SECTION B

4×5=20

(Short Answer Type Questions)

Note : *Answer the following questions in 250 words.*

Unit-I

1. Explain the compressive strength.

Or

Write note on porosity, Permeability and sorption.

Unit-II

2. Write a note on Groutings its various types.

Or

Write a note on properties desirable for building stone.

Unit-III

3. Write a note on forces acting on dam and dam failure.

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Or

What are the considerations for successful 'reservoir'.

Unit-IV

4. Write a note on methods of tunneling and support system.

Or

Explain different stages of geotechnical investigations for tunnel.

Unit-V

5. Describe the landslides, types and causes with Indian examples.

Or

Write a note on 'Siesmic Zones of India'.

SECTION C

10×5=50

(Long Answer Type Questions)

Note : Answer the following questions in **500** words.

Unit-I

1. Describe the engineering properties of rocks.

Or

Write a note on importance of engineering geology in civil engineering.

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Unit-II

2. Write a note on engineering behaviour or rockmass.

Or

What do you mean by metal and concrete aggregates and what are the desirable properties of aggregates ?

Unit-III

3. Write a note on geotechnical consideration for selection of dam sites.

Or

What are the considerations for successful reservoirs.

Unit-IV

4. What are the considerations for tunneling through rocks and soft ground ?

Or

Write a note on different stages of geotechnical investigation for tunnel.

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Unit-V

- 5.** Write a note on Bridge; its types; supports and foundations.

Or

Write notes on the followings :

- (a) Earthquake magnitude and scale
- (b) Landslide hazard ; mitigation and preventions

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