



'समानो मन्त्रः समितिः समानी'

**UNIVERSITY OF NORTH BENGAL**

B.Sc. Honours 5th Semester Examination, 2023

**CC12-GEOLOGY**

**ENGINEERING GEOLOGY**

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.*

1. Answer any **five** from the following questions: 1×5 = 5
  - (a) What is the maximum value of RSR?
  - (b) What is grouting?
  - (c) What is overbreak during tunnel construction?
  - (d) Define engineering geology.
  - (e) Name the different types of geophysical survey done in engineering projects.
  - (f) If the RMR value of a rock is 61-80, then what is the quality of that rock?
  - (g) What is a creep?
  - (h) Landslides in India mostly occur during:
    - (i) monsoon, after rainfall
    - (ii) cloudbursts (in hilly areas)
    - (iii) summer (in the plains)
  
2. Answer any **three** from the following questions: 5×3 = 15
  - (a) What are the objectives of site investigations?
  - (b) What is pozzolan and what is the purpose of using it? Name the materials that can be used as pozzolan.
  - (c) What are the parameters of rock structure rating? Describe briefly each of them.
  - (d) Name the types of utility tunnels. Describe any one of them.
  - (e) Give a short account of tunnelling through soft ground composed of unconsolidated materials.
  - (f) Write about different scales used for geological maps in three stages of site investigation.
  
3. Answer any **two** from the following questions: 10×2 = 20
  - (a) Describe the advantages and disadvantages of rock mass classification.
  - (b) Describe the effects of bedded rocks on tunnel lining.
  - (c) Name the different types of dams with Indian examples. Describe any one type.
  - (d) Write about the natural causes responsible for many of the landslides.

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