

# B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

## April 2024 Semester End Main Examinations

**Programme: B.E.**

**Branch: Civil Engineering**

**Course Code: 19CV3ESGEO**

**Course: Engineering Geology**

**Semester: III**

**Duration: 3 hrs.**

**Max Marks: 100**

- Instructions:**
1. Answer any FIVE full questions, choosing one full question from each unit.
  2. Missing data if any, may be suitably assumed.
  3. Draw neat figures wherever necessary.

### UNIT - I

- 1 a) Discuss on the internal structure of earth with a neat sketch **06**  
 b) Explain cleavage and hardness in minerals. **08**  
 c) Describe the Physical properties, chemical composition and uses of the following minerals: **06**  
 i) BAUXITE      ii) GYPSUM      iii) ORTHOCLASE

### UNIT - II

- 2 a) Discuss on the primary structures of sedimentary rocks with neat sketches. **06**  
 b) Explain the forms of igneous rocks with neat sketches. **08**  
 c) Define metamorphism and explain its types. **06**

### OR

- 3 a) Discuss on the classification of sedimentary rocks based on their grain size. **06**  
 b) Explain the textures and structures of igneous rocks. **08**  
 c) Explain the index properties of the following rocks. **06**  
 i) DUNITE    ii) SHALE    iii) MARBLE

### UNIT - III

- 4 a) Explain the qualities of a good building stone. **06**  
 b) Analyze the feasibility of tunneling operation through folded and faulted rocks. **08**  
 c) Discuss on the causes and control measures of landslides. **06**

### OR

- 5 a) Discuss on the geological features to be considered for the selection of a dam site. **06**  
 b) Explain the causes and effects of earthquakes. **08**  
 c) Explain the types of weathering briefly. **06**

**Important Note:** Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

#### **UNIT - IV**

- |   |    |  |           |
|---|----|--|-----------|
| 6 | a) | Explain with neat sketches Horst and Graben faults.  | <b>06</b> |
|   | b) | Explain the importance of joints in civil engineering practices.   | <b>06</b> |
|   | c) | At a tunnel site a bed of quartzite dips $38^{\circ}$ along $N60^{\circ}W$ and $30^{\circ}$ along $S25^{\circ}W$ . Determine its true dip amount and direction and strike direction. | <b>08</b> |

#### **UNIT - V**

- |   |    |   |           |
|---|----|---|-----------|
| 7 | a) | Define an aquifer and explain its types briefly.                    | <b>06</b> |
|   | b) | Describe in detail Artificial recharging and its benefits           | <b>06</b> |
|   | c) | Discuss on Electrical Resistivity Method in Groundwater Exploration | <b>08</b> |

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B.M.S.C.E. - ODD SEM 2023-24