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

**Autonomous Institute Affiliated to VTU**

## May 2023 Semester End Main Examinations

**Programme: B.E.** **Semester: III**
**Branch: Civil Engineering** **Duration: 3 hrs.**
**Course Code: 22CV3ESEGY** **Max Marks: 100**
**Course: Engineering Geology** **Date: 19.05.2023**

**Instructions:** 1. Answer 5 full questions choosing one full question from Units 2 and 3
2. Answer all parts of the questions together.
3. Assume missing data suitably.

**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 - I

| | | | |
|---|---|---|---|
| 1 | a) | What is Geology? With neat diagram discuss the internal structure of the Earth. | **06** |
| | b) | Explain i) Diaphinty ii) Cleavage in minerals | **08** |
| | c) | Describe the physical properties, chemical composition and uses of the following minerals.<br>PLAGIOCLASE: CALCITE: MAGNATITE | **06** |

### UNIT - II

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|---|---|---|---|
| 2 | a) | Distinguish between the following:<br>Granite – Gneiss, Lime stone – Marble, Monomineralic – Polymineralic Rocks | **07** |
| | b) | Illustrate the primary structures in Sedimentary rocks. | **07** |
| | c) | Define metamorphism. Describe the different agents of metamorphism. | **06** |

**OR**

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|---|---|---|---|
| 3 | a) | Explain the forms of Igneous rocks with a neat sketch and add a note on textural classification of Igneous rocks. | **08** |
| | b) | What is the process of sedimentation? Classify the sedimentary rocks based on the origin of the sediments. | **06** |
| | c) | Describe the index properties of the following rocks.<br>Granite, Limestone, Gneiss. | **06** |

### UNIT - III

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|---|---|---|---|
| 4 | a) | What is a dam? Discuss briefly the geological consideration in selecting the suitable site for the construction of a dam. | **08** |
| | b) | Analyse the feasibility of tunnelling operation through folded and faulted strata. | **06** |
| | c) | Explain the engineering properties of good building stones. | **06** |

**OR**

| | | | |
|---|---|---|---|
| 5 | a) | What is a land slide? Illustrate the causes, effects and remedial measures to control landslides. | **06** |
| | b) | What is weathering? Explain the physical and chemical weathering. | **06** |
| | c) | Characterize the causes and effects of earthquakes. | **08** |

**UNIT - IV**

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|---|---|---|---|
| 6 | a) | Illustrate the phenomenon of faulting with a neat sketch. Describe any five types of faults and how do you recognize faulting at the field. | **08** |
| | b) | What are folds? Classify any five types of folds and explain the Engineering importance of folded strata. | **06** |
| | c) | Define joints. Explain its types and add a note on engineering consideration dealing with jointed rocks. | **06** |

**UNIT - V**

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|---|---|---|---|
| 7 | a) | Explain the techniques for identification of ground water potential zones and add a note on VES method for sub-surface investigation. | **08** |
| | b) | What is an aquifer? Explain the different types of aquifers and add a note on its importance in various civil engineering projects. | **06** |
| | c) | A Coal formation dipping at 30° east in to a sloping ground 10° west. The width of its out crop is 160 m. Find the true and vertical thickness of the Coal formation. (Scale: 1 cm = 40 m) | **06** |

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