

**P.E.S. College of Engineering, Mandya - 571 401***(An Autonomous Institution affiliated to VTU, Belagavi)***Sixth Semester, B.E. - Civil Engineering****Semester End Examination; August - 2023****Basic Science and Natural Resources**

Time: 3 hrs

Max. Marks: 100

Course Outcomes*The Students will be able to:**CO1: Understand the basic materials in civil engineering**CO2: Analyse the types of foundation, have an insight to different types of doors, windows.**CO3: To classify Bonds in brick work, English bond, Flemish bond, Joints in stone masonry, arches.**CO4: To understand the building components and method of construction.***Note: I) PART - A is compulsory. Two marks for each question.****II) PART - B: Answer any Two sub questions (from a, b, c) for a Maximum of 18 marks from each unit.**

| Q. No. | Questions | Marks | BLs | COs | POs |
|----------------------|---|-----------|-----|-----|-------|
| I : PART - A | | 10 | | | |
| 1 a. | What is ground water? | 2 | L2 | CO1 | PO1,2 |
| b. | Define soil. What are the different types of soil? | 2 | L1 | CO2 | PO1,2 |
| c. | On what basis earth is divided into three parts? Name it. | 2 | L1 | CO1 | PO2 |
| d. | What are different types of rocks you have studied? | 2 | L2 | CO1 | PO2 |
| e. | What is bio-fuel? | 2 | L2 | CO2 | PO1,2 |
| II : PART - B | | 90 | | | |
| UNIT - I | | 18 | | | |
| 2 a. | Define weathering. Explain different types and importance. | 9 | L2 | CO1 | PO2 |
| b. | What is mineral? Describe physical properties of minerals in the identification. | 9 | L1 | CO1 | PO1,2 |
| c. | Explain important characteristics of igneous and sedimentary rocks. | 9 | L1 | CO1 | PO1,2 |
| UNIT - II | | 18 | | | |
| 3 a. | Define earthquake. Explain the causes and effects of EQ. | 9 | L2 | CO2 | PO3 |
| b. | Define Landslides. Explain causes, types and add a note on remedial measures to control landslides. | 9 | L3 | CO2 | PO3 |
| c. | Write a short note on, (i) Measuring and Ox-bow lake | 5 | | | |
| | (ii) Soil profile | 4 | L2 | CO2 | PO3 |
| UNIT - III | | 18 | | | |
| 4 a. | How you recognize Fault in the field? | 9 | L2 | CO2 | PO2 |
| b. | Explain with a neat sketch: (i) HORST and GRABEN type of fault | 5 | | | |
| | (ii) OUTLIER and INLIER fold | 4 | L2 | CO2 | PO2 |
| c. | Write short note on, (i) Columnar joint | 5 | | | |
| | (ii) Recumbent type of fold | 4 | L1 | CO2 | PO2 |

UNIT - IV**18**

- 5 a. Write short note on: (i) Hydrological cycle 5
(ii) Aquifers and its types 4 L3 CO1 PO4
- b. Describe Rain water harvesting. 9 L3 CO1 PO7
- c. Explain how the processing of bio-fuel is done? 9 L2 CO1 PO7

UNIT - V**18**

- 6 a. Define dam. Explain different types with neat figures. 9 L2 CO2 PO7
- b. Define TUNNEL. Explain different types with neat figures. 9 L2 CO2 PO4
- c. What is GPS (Global Positioning System) add a note on application. 9 L2 CO2 PO4

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