

CBCS SCHEME

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21CV34

Third Semester B.E. Degree Examination, June/July 2023 Earth Resources and Engineering

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain the Internal structure and composition of earth with neat sketch. (10 Marks)
- b. Define Landslide. What are the causes for landslide? Write the preventive measures for landslide. (10 Marks)

OR

- 2 a. What is Plate tectonics? Describe different plate boundaries. Add a note on Lithosphere and Asthenosphere. (10 Marks)
- b. What is Earthquake? How they are classified based on causes as well as depth of focus? Describe characteristics of P & S waves. (10 Marks)

Module-2

- 3 a. Explain physical properties of Minerals , Hardness , Habit , Cleavage Fracture and Streak. (10 Marks)
- b. Define Igneous rocks. Explain classification of Igneous rocks based on Silica percentage and depth of formation. (10 Marks)

OR

- 4 a. Based on physical properties, describe how the rocks can be used as construction material. (10 Marks)
- b. What is an Aquifer? Discuss various aquifer parameters. Add a note on water bearing properties of various geological formations. (10 Marks)

Module-3

- 5 a. What is Weathering? Describe different types of physical and chemical weathering. (10 Marks)
- b. Describe various erosional and depositional coastal landforms. (06 Marks)
- c. Distinguish between Black cotton soil and Laterite soil. (04 Marks)

OR

- 6 a. Discuss briefly the Geomorphological aspects in the selection of site for dam construction. Add a note on suitable site for Arch dam. (10 Marks)
- b. Discuss various erosional and depositional features of river morphology. Add a note on influence of erosional and depositional process on Civil Engineering Project. (10 Marks)

Module-4

- 7 a. P, Q and R are test boreholes there sunk at 3 points of an equilateral triangle whose sides are 480m each. P is west of Q and R is north of midpoint of PQ. Boreholes P, Q and R reached the upper surface of a shear zone at 100m, 220m and 260m depth respectively.
 - i) Determine strike and dip of the shear zone.
 - ii) Another bore hole is sunk at 'T' (midpoint of Q & R). Determine at what depth bore hole T reach the same shear zone. (10 Marks)

- b. Define an Unconformity. Explain various types of an unconformity with neat labeled sketches. (10 Marks)

OR

- 8 a. What is a Fault? With a neat sketch, explain Normal and Reverse fault? How the faults can be recognized in the field. (10 Marks)
- b. What is ground improvement technique? Explain the process of rock bolting, rock jointing and grouting. (05 Marks)
- c. Write a short note on effect of joints in a tunnel project. (05 Marks)

Module-5

- 9 a. Define Remote Sensing. List the applications of remote sensing in Civil Engineering practices. (08 Marks)
- b. Define GIS. Describe briefly various components of GIS. (08 Marks)
- c. Write a short note on Toposhete and its significance. (04 Marks)

OR

- 10 a. Define Photogrammetry. Describe briefly the basic attributes of Areal Photographs to be used in photogrammetry. (08 Marks)
- b. What is GPS? Describe various segments of GPS. (06 Marks)
- c. What is GPR? Write applications of GPR in Civil Engineering practices. (06 Marks)

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