



CBGS SCHEME

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)

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OR

- 10 a. Define Photogrametry. Describe briefly the basic attributes of Areal Photographes to be used in photogrametry. (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)
