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Third Semester B.E. Degree Examination, Dec.2023/Jan.2024

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. With a neat sketch, explain the internal structure of the Earth. (08 Marks)
- b. What is Earthquake? Explain the types and causes of Earthquake. (08 Marks)
- c. Write a short note on Tsunami and its causes. (04 Marks)

OR

- 2 a. Write the importance of Geology in the field of Civil Engineering. (08 Marks)
- b. How Landslides are caused? Explain the preventive measures of Landslide. (08 Marks)
- c. Write a note on Cyclone and its causes. (04 Marks)

Module-2

- 3 a. What is Mineral? Explain classification of Minerals with examples. (04 Marks)
- b. Explain physical properties of any two Minerals : (06 Marks)
 - i) Hematite
 - ii) Feldspar
 - iii) Calcite.
- c. Explain the types of Rocks and write a note on Railway ballast and Decorative stones. (10 Marks)

OR

- 4 a. Explain the properties of any two : (06 Marks)
 - i) Lusture
 - ii) Hardness
 - iii) Cleavage.
- b. What is an Aquifer? Write the water bearing properties of an Aquifer. (08 Marks)
- c. What are Sedimentary Rocks? Explain the texture of Sedimentary Rocks. (06 Marks)

Module-3

- 5 a. What is Weathering? Explain the types of weathering. (08 Marks)
- b. Explain Soil profile with diagram and write the types of soil. (08 Marks)
- c. Write a note on Artificial recharge of groundwater. (04 Marks)

OR

- 6 a. What is Dam? Explain Geological conditions on Earthen dam , Gravity dam and Arch dam. (06 Marks)
- b. Write a short note on Interlinking of Rivers. (08 Marks)
- c. Write the effects of weathering on monumental rocks. (06 Marks)

Module-4

- 7 a. Three bore hole are sunk at three point of an equilateral triangle of 480m each. Where bore hole P is located West of Q and bore hole R is located North and midpoint of PQ and they reach coal seam at 100m, 220m and 260m depth respectively. Determine (10 Marks)
 - i) The Altitude (Dip and Strike)
 - ii) At what depth bore hole 'S' reaches sandstone bed if it is located at midpoint of QR.

Scale for triangle – 1 : 100 ; Scale for gradient – 1 in 1 units.

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

- b. With a neat diagram, explain Electrical resistivity method by using Wenner and Schlumberger method. (10 Marks)

OR

- 8 a. A limestone bed dips 25° East and it has width of 160m. Determine true thickness and vertical thickness. (Scale – 1 : 100). (04 Marks)
b. What are Faults? Explain types of Faults. (08 Marks)
c. What are Folds? Explain types of Folds. (08 Marks)

Module-5

- 9 a. Explain applications and uses of Remote sensing and GIS. (10 Marks)
b. Explain GPS , GPR and Drone applications in Civil Engineering. (10 Marks)

OR

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- 10 a. What is Photogrammetry and write the applications of Photogrammetry. (10 Marks)
b. Write a short note on :
i) Toposheet ii) Flight Planning iii) Scale. (10 Marks)
