



P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

Third Semester, B.E. - Civil Engineering

Semester End Examination; Dec. - 2015

Applied Engineering Geology

Time: 3 hrs

Max. Marks: 100

Note: i) Answer **FIVE** full questions, selecting at least **ONE** full question from each **unit**.
ii) Write neat sketch where ever necessary.

UNIT - I

- 1 a. Define Rock forming and Ore forming minerals with examples. Explain light bearing properties in minerals with suitable example. 10
- b Write the physical properties and uses of iron ore minerals (two) carbonate minerals (two) and Sulphate minerals (one). 10
- 2 a. Write brief classification of igneous, sedimentary and metamorphic rocks with examples. 6
- b Define soil, its classification and profile. 6
- c. Briefly explain textures in igneous rocks. 8

UNIT - II

- 3 a. Define Epigene and typogene agents with example. 4
- b Describe the types and causes of earthquake. 8
- c. What are the engineering considerations against earthquake resistant structures? 8
4. Write short notes on :
- a) Seismic waves b) Causes of landslide 20
- c) Tsunami d) Preventive measures for landslide.

UNIT - III

- 5 a. Differentiate between Faults and Joints. 8
- b Write in brief the classification of folds based on axial plane. 6
- c. Write a note on engineering importance of folds. 6
6. Write short notes on :
- a) Dip, Strike and Out crop b) Recognition of faults in field 20
- c) Joints in sedimentary rocks d) Horst and Graben.

UNIT - IV

- 7 a. What is silting in reservoir? List and explain different types of remedial measures. 10
- b What is tunnel? Explain selection criteria for tunnels in Anticline and Syncline. 10
- 8 a. Define Dam and its purpose. Explain geological and geotechnical consideration to select suitable sites for dam constructions. 15

- b Write a note on reservoir induced seismicity. 5

UNIT - V

- 9 a. Define the following terms with respect to ground water :
- i) Porosity and Permeability 10
 - ii) Vadose zone and Water table
 - iii) Perched aquifer
- b. Define resistivity in rock. Briefly explain electrical resistivity method. 10
- 10a. Define GPS, its components and ages. 5
- b. Write principles of Remote sensing and its applications in civil engineering. 10
- c. Write a note on top of sheet and aerial photos. 5

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