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Department of Civil Engineering

Question Bank

Subject - **BTCVC406_Engineering Geology**

Module 1

1. What are the applications of geology in civil engineering?
2. Define “volcano” and describe various types of volcanoes.
3. What are the major products of volcanic activity?
4. Write a short note on central and fissure types of eruption.
5. Write a detailed note on the interior of the earth with a neat labeled diagram.
6. Write short notes on:-
 - a. Divergent plate boundary
 - b. Denudation
 - c. Barchan
 - d. Meandering
7. Give a detailed account of types of mountains and their origin with suitable examples.
8. Explain the geological work done by winds and features of erosion and deposition.
9. Explain the geological work done by river and features of erosion and deposition.
10. Explain factors responsible for the eruption of volcanoes.
11. What is the difference between convergent and divergent plate boundaries?
12. What are the differences between Mesa, Butte, and Plateau?
13. Explain in brief about geomorphological processes.
14. Write in brief about theory of plate tectonics.
15. Write a detailed note on various river drainage patterns.

Module 2

1. Write a detailed classification of Igneous rocks based on depth, silica and texture.
2. Write a detailed classification of sedimentary rocks based on textures and structures of sedimentary rocks.
3. Enumerate detailed information about various intrusive and extrusive igneous bodies.
4. Write a short note on agents of metamorphism and their role in metamorphism.
5. Write a short note on the types of silicate structures in rock-forming minerals.
6. Give a detailed account of physical properties of minerals useful for the identification of minerals.
7. Write in brief the classification of metamorphic rocks.
8. Enumerate procedure of formation of sedimentary rocks.
9. What is metamorphism? Describe gneissose and Schistose textures with neat sketches.
10. Explain the difference between cataclastic and thermal metamorphism.
11. Write notes on schistose structures in detail.
12. Describe various concordant and discordant igneous intrusions with neat sketches.
13. Illustrate amygdaloidal and vesicular structures following with diagram.
14. Write a short note on: -
 - (i) Porphyritic textures
 - (ii) Arenaceous textures

(iii) Gneissose structure

15. Attempt any three following questions (diagrams wherever necessary).
- (i) Mohs scale of hardness
 - (ii) Dyke
 - (iii) Rock cycle
 - (iv) Porphyritic texture

Module 3

1. Define the term “unconformity” and describe various types of unconformities.
2. What is the difference between horst and graben faults?
3. Define faults and explain different types of faults?
4. Enlist and describe parts of a fold and its types.
5. Describe various types of joints and their civil engineering significance.
6. Describe the detailed structural classification of building stones.
7. Explain various methods of dressing building stones.
8. What are the types of aquifers with a neat labelled diagram?
9. Describe porosity and permeability and their role in the hydrological properties of rock.
10. What is the difference between a confined aquifer and unconfined aquifer?
11. Explain the various types of building stones occurring in India with famous examples.
12. What are the traditional dressing types applied in manual dressing?
13. Explain with a neat sketch division of sub-surface water zones.
14. What are the selection criteria for the selection of stones for construction?
15. Describe and draw a diagram of an angular unconformity.

Module 4

1. What are the pros and cons of Rock Quality Designation method?
2. Explain pros and cons of using percussion type of drilling method.
3. Explain the complete procedure of engineering geological investigation.
4. Enumerate the difference between percussion and diamond drilling methods.
5. What are the various drilling techniques used for the collection of samples?
6. Describe the procedure and calculations of rock quality designation method.
7. What are the various types of maps used for geological investigations?
8. Describe the limitations of drilling in the subsurface investigation.
9. What are the limitations of the rock quality designation technique?
10. Write a detailed note on core preservation and arrangement methods.
11. What are the various drilling techniques of exploration in soft ground?
12. Enumerate various precautionary measures necessary in the core drilling process.
13. Write a short note on the objectives of engineering geological investigations.
14. Write a short note on wash boring type of subsurface exploration method.
15. What are the possible adverse effects of poor geological investigation?

Module 5

1. Explain the various favourable and unfavourable geological conditions for reservoir site.
2. What are the geological criteria for dam site selection?
3. What are the various types of site improvement techniques?
4. Define dam and describe various types of dam structures.
5. Write a detailed note on various tunnel excavation techniques.
6. Describe the feasibility of a dam in a folded area with neat labelled diagrams.
7. What are the pros and cons of dams constructed on Deccan trap basalt?
8. Write a short note on the suitable and unsuitable characteristics of sedimentary rocks at tunnels.

9. Explain various geological factors for selection of sites for construction of bridges.
10. Enumerate various types of bridges and their components of bridges.
11. Write a short note on Tunnel Boring Machine (TBM).
12. Explain various problems faced in the tunnelling construction in folded and faulted strata.
13. Give examples of important dam failures and the reasons behind the failure.
14. Write a short note on the suitable and unsuitable characteristics of igneous rocks at tunnels.
15. Write a detailed note on effects of joints in tunnel construction.

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