

B.TECH
(SEM VII) THEORY EXAMINATION 2018-19
ENVIRONMENTAL GEOTECHNOLOGY

Time: 3 Hours

Total Marks: 100

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **2 x 10 = 20**
- a. Why the concept of geotechnology important in terms of environment?
 - b. Mention any two properties of contaminated soil.
 - c. Discuss the important characteristics of dust.
 - d. Explain the process of contamination of sub-surface soil.
 - e. What do you understand by the term sanitary landfill?
 - f. Explain the importance of liner in landfill.
 - g. Discuss the importance of grout in managing waste.
 - h. Explain the importance of re-use of waste material.
 - i. Describe the structure of soil with diagram.
 - j. What do you mean by term lateral earth pressure?

SECTION B

2. Attempt any *three* of the following: **10 x 3 = 30**
- a. Explain the importance of development of environmental geotechnology in detail.
 - b. Discuss in detail about environmental cycle and various aspects related to it.
 - c. Elaborate the various environmental related geotechnical problems and the ways to reduce them.
 - d. Discuss the identification and characteristics of contaminated soil with well labeled diagram.
 - e. Explain the various cycle of nature with their flow chart involved.

SECTION C

3. Attempt any *one* part of the following: **10 x 1 = 10**
- (a) Discuss in detail about soil-structure interaction and the stability of soil.
 - (b) Describe in detail about load distribution process in soil structure.
4. Attempt any *one* part of the following: **10 x 1 = 10**
- (a) Differentiate between the landfill for municipal and hazardous waste and its selection criteria.
 - (b) Discuss the importance of liners in the construction of landfill in detail.
5. Attempt any *one* part of the following: **10 x 1 = 10**
- (a) What are mine tailing impoundments? Elaborate its uses in detail.
 - (b) Explain the various grouting process in detail. How it can be used to control the hazardous waste?

6. **Attempt any *one* part of the following:** **10 x 1 = 10**
- (a) Discuss in detail about the factors affecting pile capacity related to the environment.
 - (b) Mention in detail about all the problems which are encountered while constructing under-water foundations.
7. **Attempt any *one* part of the following:** **10 x 1 = 10**
- (a) Describe in detail about the remedial action which are to be taken for the removal of hazardous substance.
 - (b) Explain the importance of study of environmental geotechnology for removing waste of any type.

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