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Roll No. :

320652(20)

B. E. (Sixth Semester) Examination, Nov.-Dec. 2021

(New Scheme)

(Civil Engg. Branch)

GEO TECH ENGINEERING–II

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Part (a) of each question is compulsory. Attempt only two parts from (b), (c) and (d).

Unit-I

1. (a) What is the meaning of F.O.S.?

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- (b) Write short notes on : 7
- (i) Stability number
 - (ii) Slope failure
- (c) Explain swedish circle method. 7
- (d) Explain friction circle method. 7

Unit-II

2. (a) Define backfill. 2
- (b) Derive the equation of earth pressure at rest. 7
- (c) Compute the intensities of active and passive earth pressure at depth of 8 metres in dry cohesionless sand with an angle of internal friction of 30° and unit weight of 18 kN/m^3 what will be the intensities of active and passive earth pressure if the water level rises to the ground level? Take saturated unit weight of sand as 22 kN/m^3 . 7
- (d) Explain concept of Coulomb's wedge theory. 7

Unit-III

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3. (a) Define shear flux of soil. 2
- (b) Write short notes on : 7
- (i) Consolidation settlement
 - (ii) Immediate settlement
- (c) Explain effect of water table on bearing capacity. 7
- (d) A strip footing is 1.5 m wide and its base on 1 m below the ground surface. If the soil below the ground level is dense with $C = 100 \text{ kN/m}^2$, and $\phi = 38$ determine the ultimate bearing capacity. assume $\gamma = 20 \text{ kN/m}^3$ 7

Unit-IV

4. (a) What is scour depth for well foundation? 2
- (b) Write short notes on : 7
- (i) Well foundation
 - (ii) Sinking of wells
- (c) Describe different component parts of well foundation. 7
- (d) Explain the classification of piles foundation. 7

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Unit-V

5. (a) Define expansive soil. 2
- (b) What is an expansive soil? Where is it found in India? What are its generally characteristics? 7
- (c) What are the problems associated with contaminated and expansive soil. 7
- (d) Write short notes on : 7
- (i) Swelling potential
- (ii) Free swell