SEAT No. :

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OCT.-16/B.E./Insem. - 113
B.E. (Civil)
ADVANCED GEOTECHNICAL ENGINEERING
(401 005) (2012 Pattern) (Semester - I) (Elective - II)

Time : 1 Hour] *[Max. Marks :30*

Instructions to the candidates:

1) *Answer Q1 or Q2, Q3 or Q4 and Q5 or Q6.*
2) *Neat diagrams must be drawn whenever necessary.*
3) *Figures to the right indicate full marks.*
4) *Assume suitable data if necessary and mention it clearly.*
5) *Non programmable calculator is allowed.*

Q1) a) Enlist various types of soil classification system and explain any one type in detail. **[5]**

b) Enlist different types of clay minerals and explain role of montmorillonite. **[5]**

OR

Q2) a) Explain in detail engineering properties of soil. **[5]**

b) Explain different types of soil structures. **[5]**

Q3) a) Compute the active earth pressure at a depth of 5 m in sand whose angle of friction is 37^0 and density of 15.60 kN/m^3 in dry state . **[5]**

b) Explain Culmann's method. **[5]**

OR

Q4) a) Explain Rankine's Theory of Earth Pressure on retaining wall due to submerged back fill. **[5]**

b) A retaining wall 9 m high retains cohesion less soil, with an angle of internal friction 33^0. The surface is level with the top of the wall. The unit weight of the top 3m of the fill is 21 KN/m^3 and that of the rest is 27 KN/m^3. Find the magnitude and point of application of the resultant active thrust. **[5]**

Q5) a) Enlist different types of geosynthetics and explain any one in brief. **[5]**

b) Explain the advantages of Reinforced Earth Structure. **[5]**

OR

Q6) a) Write in brief application of geo-textile in erosion control. **[5]**

b) Write a note on slope stabilization using soil nailing method. **[5]**

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