Enrolment No._____

HASMUKH GOSWAMI COLLEGE OF ENGINEERING, VAHELAL
MID SEMESTER EXAMINATION, SEPTEMBER-2016

Subject Code:2150609   **Date: 28/9/2016**
Subject Name: Soil Mechanics   **Sem: 5ᵀᴴ**
Time: 10:00 TO 10:50   **Total Marks: 20**

Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

QUE.1	**(A)**	Define: (1) Compaction (2) consolidation (3) shear strength of soil.	**3**
	(B)	Describe the phenomenon of consolidation by spring analogy.	**3**
QUE.2	**(A)**	List out factor affecting compaction and describe any two.	**3**
	(B)	An earthen embankment is compacted at a water content of 17%.the bulk density is 19.5KN/m³. Determine the void ratio and degree of saturation of the compacted soil if the specific gravity of soil is 2.72.What would be the theoretical maximum dry unit weight?	**4**

OR

	(B)	Explain direct shear test with its merits and demerits.	**4**
QUE.3	**(A)**	30mm thick sample of clay consolidated 50% during the laboratory test in 30 minutes with double drainage. How much time it will take for a 6 meter thick layer of same clay to consolidated 50%?	**3**
	(B)	Describe vane shear test. Write its merits and demerits.	**4**

OR

	(A)	A vane 10.4 cm long and 8 cm in diameter was lowered into soft clay at the bottom of bore hole. Torque was applied and value of failure was 50 N-m. Determine the shear strength of clay in the natural state.	**3**
	(B)	Describe method of compaction used in a field.	**4**

*********************************ALL THE BEST*********************************