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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Sixth Semester, B.E. - Civil Engineering

Semester End Examination; July / Aug. - 2022

Reinforced Earth Structures

Time: 3 hrs *Max. Marks: 100*

Course Outcomes

The Students will be able to:

CO1: Identify, formulate reinforced earth techniques that are suitable for different soils and in different structure.

CO2: Understand the laboratory testing concepts of Geosynthetics.

CO3: Design RE retaining structures and Soil Nailing concepts.

CO4: Determine the load carrying capacity of Foundations resting on RE soil bed.

CO5: Asses the use of Geosynthetics in drainage requirements and landfill designs

***Note**: I) **PART - A** is compulsory. **Two** marks for each question.*

*II) **PART - B**: Answer any **Two** sub questions (from a, b, c) for a Maximum of **18 marks** from each unit.*

Q. No.	Questions	Marks	BLs	COs	POs
	I : PART - A	**10**			
I a.	What are the differentness between soil reinforcement and concrete Reinforcement?	2	L1	CO2	PO1
b.	List out the types of reinforcing elements.	2	L1	CO3	PO1
c.	List out the components of a nailed soil wall.	2	L1	CO4	PO1
d.	Define factor of safety against sliding.	2	L1	CO1	PO2
e.	List out the design criteria to select graded filters.	2	L1	CO5	PO2
	II : PART - B	**90**			
	UNIT - I	**18**			
1 a.	Enumerate the basic mechanism of soil reinforcement.	9	L2	CO1	PO1,2
b.	Enumerate briefly the functions of Geosynthetics.	9	L2	CO1	PO1,2
c.	Enumerate the applications of soil reinforcement.	9	L2	CO2	PO1,2
	UNIT - II	**18**			
2 a.	Enumerate the construction sequence of a reinforced earth wall.	9	L2	CO3	PO1,2
b.	Enumerate the failure mechanism to check for stability of a reinforced earth wall.	9	L2	CO3	PO1,2
c.	Check the reinforced earth wall shown in Fig. 2c for stability against; i) Sliding ii) Overturning iii) Bearing capacity failure	9	L3	CO3	PO1,2,3

Contd... 2

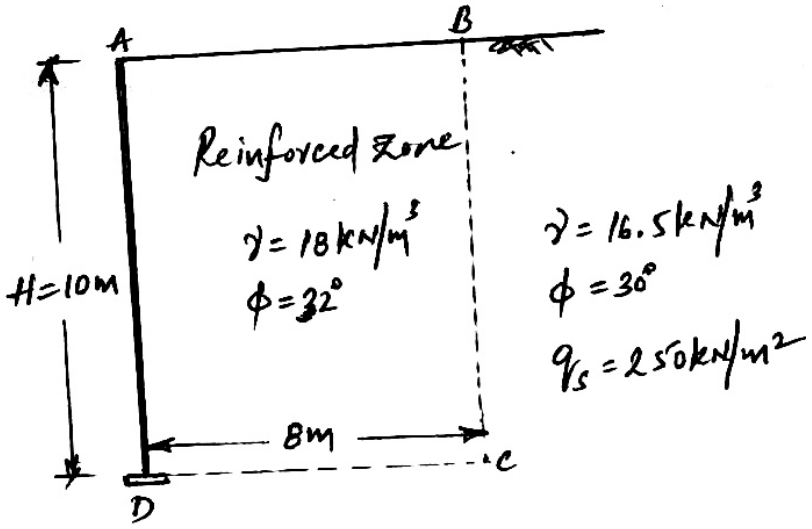

Fig.Q2c

	UNIT - III	**18**			
3 a.	Enumerate construction sequence for nailed soil wall.	9	L2	CO4	PO1, 2
b.	Enumerate the influence of the reinforcement is to improve the performance of unpaved road.	9	L2	CO4	PO1,2
c.	Enumerate reinforcement of soil beneath foundations.	9	L2	CO4	PO1,2
	UNIT - IV	**18**			
4 a.	Enumerate the functional requirements of Geosynthetics.	9	L2	CO4	PO2,3
b.	Enumerate the properties of Geosynthetics.	9	L2	CO4	PO2,3
c.	Enumerate the types of geosynthetics.	9	L2	CO4	PO2,3
	UNIT - V	**18**			
5 a.	Enumerate briefly the selection of granular filter materials.	9	L2	CO5	PO2,3
b.	Enumerate requirements for impervious barrier for liner and covers.	9	L2	CO5	PO2,3
c.	Enumerate stability analysis for sliding of geo-membrane over clay in liner system.	9	L2	CO5	PO2,3

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