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Bengaluru

Mid Term Examinations - October 2026

Date: 06/10/2026 **Time:** 11:45 AM - 01:15 PM

Course Code: CIV3443 **Course Name:** Construction Equipment and Machinery

Semester: Fifth Semester **Max. Marks:** 50 **Weightage:** 50%

CO - Levels	CO1	CO2	CO3
Marks	22	8	60

PART A: Answer Following Questions. 10 M

Q.N.	Questions	M	CO	BT
1	State the characteristic filling action of a clamshell and mention one construction situation where it is suitable	2	CO1	BT1
2	Mention any two construction applications of a backhoe.	2	CO2	BT1
3	Where would a wheeled excavator be preferred? State any two suitable applications or site conditions.	2	CO2	BT1
4	Explain why a machine having sufficient digging depth may still be unsuitable for a particular excavation operation.	2	CO2	BT2
5	Hard and abrasive material has to be excavated in a terrain with irregular ground condition. Which excavator type and bucket type would be more suitable	2	CO2	BT2

PART B : Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
6	Explain preventive maintenance, predictive/condition-based maintenance and corrective/breakdown maintenance. Discuss the factors that should be considered while selecting an appropriate maintenance approach for construction equipment.	10	CO1	BT2
7	Explain the factors affecting the selection of construction equipment and bring out why each factor is important in determining equipment suitability.	10	CO1	BT2

PART C: Answer Any 1 Following Questions. 15 M

Q.N.	Questions	M	CO	BT
8	A canal bed has to be excavated from a stable bank located away from the excavation edge. The material is wet, the ground close to the canal is weak and precise bucket positioning is not critical. Select suitable excavating equipment and justify the selection based on reach, machine position, ground conditions, bucket action and nature of excavation.	15	CO3	BT3
9	A large construction project involves excavation of an exposed soil and loosened-rock face located predominantly above the machine standing level. High production is required and excavated material must be loaded into hauling units. Select a suitable excavating equipment/configuration and bucket and justify your choice based on the excavation geometry, digging action, material, working space and loading requirement	15	CO3	BT3

PARTD: Answer Any 1 Following Questions. 15 M				
Q.N.	**Questions**	**M**	**CO**	**BT**
10	A multi-storey building project requires workers, tools and construction materials to be transported repeatedly between the ground and several floors throughout the working day. Select suitable hoisting/lifting equipment and justify your selection based on the required movement, frequency of operation, load/passenger requirement, lift height and site logistics.	15	CO3	BT3
11	A road project involves the following earthwork conditions: a) a large area of granular fill, and b) a narrow utility trench containing granular backfill. Select suitable compaction equipment for each condition and justify the selections based on soil type, working space and compaction mechanism.	15	CO3	BT3