

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2160601

Date: 27/04/2017

Subject Name: Advanced Construction and Equipments

Time: 10:30 AM to 01:00 PM

Total Marks: 70

Instructions:

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

		MARKS
Q.1	Short Questions :Fill in the blanks	14
1	Raymond piles are _____ cast in situ piles.(Cased , Uncased)	
2	Piles closely driven in loose granular soils to improve the bearing capacity of piles are called _____. (Compaction piles , Tension piles)	
3	_____ cofferdam is preferred when the area to be dammed off is small and the height of water is large. (single wall, double wall)	
4	Rock-fill cofferdams are used when the height of water is (1.3m to 1.8m , 1.8m to 3m)	
5	_____ cutting edges are preferred for pneumatic caissons. (sharp, blunt)	
6	Pneumatic caissons are to be used when maximum depth of water is _____ (35m,18m)	
7	_____ grouting is used as a technique for control of ground water in granular soils.(Cement, Chemical)	
8	_____ method of ground water control is used for the soils of finer particle size i.e. silt or clays.(Electro-Osmosis, well point)	
9	The most economical equipment is one whose _____ cost is minimum. (Operating, Depreciation)	
10	The decrease or loss in the value of equipment due to time, wear and tear is called _____.(Depreciation, down time cost)	
11	_____ is the most sensitive nitroglycerin based explosive. (Dynamite, slurry)	
12	_____ conveyors are used for handling of pulverized or granular materials. (screw, belt)	
13	_____ is used for compacting the granular soil in the ground.(Grouting,Vibro-floatation)	
14	_____ well point system is used for rectangular excavations for basements, (Progressive type , ring type)	
Q.2	(a) Explain pile accessories with figure.	03
	(b) Explain under reamed piles.	04
	(c) Explain in detail the economic height of cofferdam	07
	OR	
	(c) Discuss various factors governing the selection of type of cofferdam.	07

Q.3	(a)	What is group efficiency of piles? Describe in short various methods to determine group efficiency of piles.	03
	(b)	Discuss various cutting edges for caissons with their merits and demerits.	04
	(c)	Explain Pneumatic Caisson in detail with neat diagram.	07
OR			
Q.3	(a)	What is a monolith? Explain with figure.	03
	(b)	Enlist various methods of demolition. Explain any one in detail.	04
	(c)	What is formwork? Discuss the formwork of columns and stairs with neat sketches.	07
Q.4	(a)	Describe commercial types of explosives in brief.	03
	(b)	Discuss belt conveyors with neat figure.	04
	(c)	Enlist various methods of ground water control. Discuss any two methods with neat diagrams.	07
OR			
Q.4	(a)	Give classification of excavating equipments.	03
	(b)	Discuss the causes of failure of false work..	04
	(c)	Discuss the structural system of tall structures.	07
Q.5	(a)	Define: (1) Rimpull (2) Drawbar pull (3) Gradability	03
	(b)	Classify compressors. Explain any one in detail.	04
	(c)	Give the classification of construction equipments. Also discuss the importance of construction equipments.	07
OR			
Q.5	(a)	Define: (1) Depreciation cost (2) Down time cost (3) Operating cost	03
	(b)	Enlist various crushers and discuss any one type in detail.	04
	(c)	Calculate the depreciation for each year by sum of digits method for the construction equipment having purchase cost of Rs 10,000/- and scrap value at the end of useful life of five years equal to 10% of its original purchase price.	07
