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 forcompacting 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? Describein 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**

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