Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER II– EXAMINATION – WINTER - 2016

Subject Code: 2723304 **Date: 19/11/ 2016**

Subject Name: Fluvial Hydraulics

Time: 2:30 pm to 5:00 pm **Total Marks: 70**

Instructions:

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

Q.1	**(a)**	Explain the following terms (1) Bed load (2) Suspended load (3) Bed material load (4) Wash load	**07**
	(b)	Explain the process of development of bed forms in an alluvial channel with figures.	**07**
Q.2	**(a)**	Explain the concept of various approaches used for incipient motion of sediments.	**07**
	(b)	Explain the theory of regime in an alluvial channel.	**07**
		OR	
	(b)	Discuss Shield's curve in detail with figure.	**07**
Q.3	**(a)**	Explain various approaches to calculate the bed load in an alluvial channel.	**07**
	(b)	Explain depth integrating sampler and width integrating sampler to collect suspended sediment.	**07**
		OR	
Q.3	**(a)**	Explain various approaches to calculate the suspended load in an alluvial channel	**07**
	(b)	Explain Einstein's method to calculate the hydraulic radius corresponding to bed.	**07**
Q.4	**(a)**	Describe the procedure of designing a stable channel.	**07**
	(b)	Describe sediment continuity equation. Also derive it.	**07**
		OR	
Q.4	**(a)**	Describe the process of aggradation and degradation in an alluvial channel with figure.	**07**
	(b)	Explain various samplers for collecting bed load in an alluvial stream.	**07**
Q.5	**(a)**	Draw a sketch showing process of sedimentation on the upstream of a reservoir. Also explain it.	**07**
	(b)	Explain various methods of controlling reservoir sedimentation.	**07**
		OR	
Q.5	**(a)**	Explain mathematical modeling of computing aggradation profile in an alluvial channel.	**07**
	(b)	Describe the process of scour (with figure) around (1) Bridge pier (2) Abutment	**07**

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