

**UNIVERSITY OF RUHUNA**  
**BACHELOR OF SCIENCE IN FISHERIES AND MARINE SCIENCES DEGREE**  
**Level IV Semester I – 2017 July / August**

**OCG 4162 – Stratigraphy and Sedimentology**

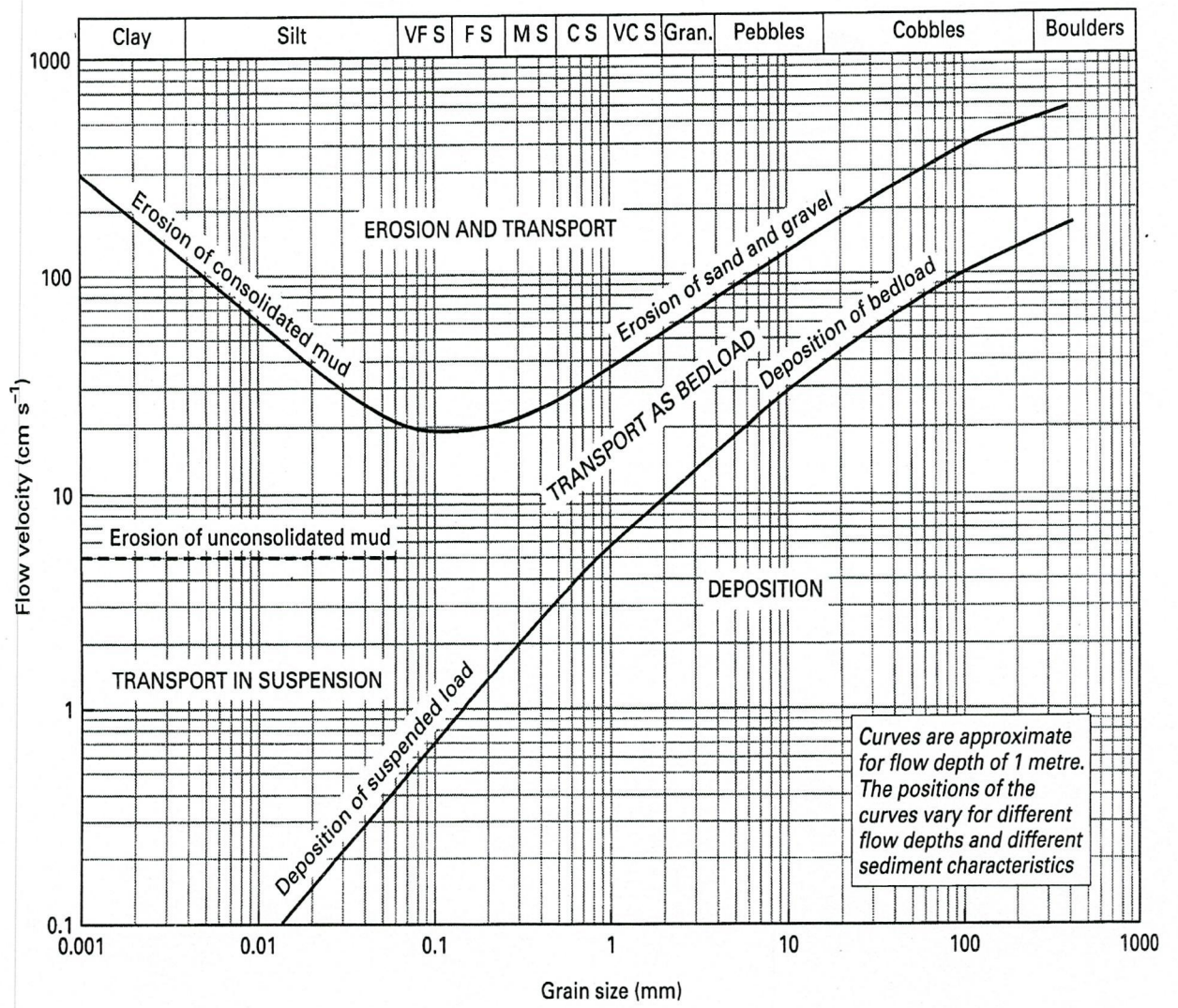
**Answer only four (04) questions.**

**Time: 02 hours**

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1. i. Write a short description on siliciclastic marine sediments (10 marks)
- ii. a. Identify prominent coastal depositional environments in the figure shown below (05 marks)
- b. Describe depositional processes and evolution of any depositional environment you identified on the diagram. (10 marks)



2. i. Briefly describe stratigraphical sequences form during a sea level cycle (Lowstand → Highstand → Lowstand).  
Use suitable diagrams for your explanation. (10 marks)
- ii . Discuss the applicability of Walther's Law in reconstructing coastal evolution (15 marks)
3. i. Write a short description on the processes involved in deriving and delivering sediment to a sedimentary basin. (10 marks)
- ii. Write an essay on the role of weathering in landscape development. Use facts and examples given in paper by Vanacker et al. 2007. (15 marks)
4. i. Write short notes on any two depositional sedimentary structures (10 marks)
- ii. Explain the development of sedimentary structures of a point bar deposit.  
Use suitable diagrams (15 marks)
5. i. Describe how grain size and grain shape influence sorting of sediment (10 marks)
- ii. Explain the influence of particle size, wind velocity, and sand supply in determining the type of bedform develop on a dune field . (15 marks)
6. i. Briefly explain different modes of sediment movement in a river (10 marks)
- ii. Particle size analysis of unconsolidated sediment on an alluvial plain revealed that silica sand particles of the plain belong to two grain size populations having mean sizes of 0.003 mm and 1 mm. If the flow velocity of a flood event increases from 1 to 100  $\text{cm s}^{-1}$  at the flood plain, explain the behaviour of sediment using the Hjulström curve given below. (15 marks)



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