



American University of Beirut
Sedimentology (Geol. 222)
Final Exam



17 June, 1999

- 1- (Total 55 pts). Discuss modern reefs and reef environments:
 - a) Reef organisms (5 pts) – with a graph showing the growth forms of reef-building organisms and the principal types of environment in which they occur (10 pts)
 - b) Reef deposits (5 pts) – with graphs showing:
 - the idealized facies in a typical modern, mature coral reef with a well-developed reef framework (10 pts)
 - a cross-sectional view of a hypothetical zoned marginal reef illustrating the major zones, the principal types of limestone produced, and the growth forms of organisms in different parts of the reef (10 pts)
 - c) The low-energy reef facies (5 pts) – with a graph illustrating the variations in reef zonation in response to different energy conditions ranging from calm water to rough water (10 pts)

- 2- (Total 5 pts) Draw schematically and indicate with arrows the dish and the pillar structures

- 3- (Total 15 pts) Draw and label the principal environments in which post-depositional modification of carbonate sediments occurs. Indicate also the dominant diagenetic processes that occur in each of the major diagenetic realm

- 4- (Total 25 pts) Discuss the recognition of ancient deltaic deposits:
 - a) Vertical facies succession (5 pts) – with a graph illustrating an idealized vertical succession of facies in a fluvial dominated delta, and indicating the possible thickness of the individual units (15 pts)
 - b) Sedimentary structures and fossils (5 pts)

