

Alp 2202: Water Resources and Aquatic Ecology

CAT II

Time: 30 Minutes

Answer ALL Questions

Q1.(a) Using a sketch, describe the zones of a marine environment. (10 marks)

(b) The rate of consumption of dissolved oxygen in a polluted fishpond is given as

$$-\frac{dL}{dt} = kL$$

(i) Name the terms in the equation. (3 marks)

(ii) Show that the oxygen demand exerted after time  $t$  is given as

$$y = L_0 (1 - e^{-kt})$$
 (5 marks)

(iii) Given  $K=0.5$  per day,  $BOD_5=9.87\text{mg/l}$ . Calculate  $L_0$  at time  $t = 0$  (2 marks)