

**ENGINEERING TRIPOS PART IIA 2007**  
**3D5: ENVIRONMENTAL ENGINEERING 1**

Answers

1. a) 1,4,5,5,7,8,10,10,9,7,7,6,5,5,4,3,4,0 and  $8.33 \text{ m}^3/\text{s}$

2 174 seconds

3 a) 0.82 m/s

b) 2.46 kg/s per metre width

c) Dunes (Albertson, Simons, Richardson)

Ripple-dunes (Garde and Albertson)

4 a) 17 litres/sec and 5.33 kW

b) 777 rpm and 91p per day