

## River Homework 6 Answers

1) At what time was the River Seeton at Peak discharge? (1)

20:00 on day 1

2) Peak rainfall around the River Dorth was at 06:00 on day 1. What was the lag time? (1)

18 hours

3) Which river is more likely to flood? Outline one reason for your answer (2)

1.3 The River Seeton is more likely to flood [1 mark] because it has a higher peak discharge, meaning that there is more water in the channel [1 mark]. / The River Seeton is more likely to flood [1 mark] because it has a shorter lag time, meaning that discharge increases more quickly [1 mark].

4) The land around the River Seeton has been paved and built on. Suggest how land use here might affect the shape of the hydrograph (2)

1.4 Built-up areas contain lots of impermeable surfaces and drains [1 mark]. Impermeable surfaces increase runoff and drains quickly take runoff to rivers, so the hydrograph will have a higher peak discharge and a shorter lag time [1 mark].

5) Explain how two physical factors may increase the risk of flooding (2)

Any two from: e.g. prolonged rainfall causes the soil to become saturated, so any further rainfall can't infiltrate [1 mark]. This increases runoff into the river, so discharge increases quickly and the river is more likely to flood [1 mark]. / Heavy rainfall means the water arrives too rapidly for infiltration, so there's a lot of runoff [1 mark]. This increases discharge quickly, so the risk of flooding increases [1 mark]. / Clay soils and some rocks, e.g. granite and shale, are impermeable (i.e. they don't allow infiltration) so runoff is increased [1 mark]. When it rains, discharge increases quickly, so the flood risk increases [1 mark]. / If a river is in a steep-sided valley, water will reach the river channel much faster because water flows more quickly on steeper slopes [1 mark]. Discharge increases rapidly, so flooding is more likely [1 mark].