

LEAN PRODUCTION – Critical Path Analysis

Using the A2 Wolinski book, complete the following:

Q1 Practice Exercise 2 (page 226), Question 1 (12marks) & (2marks)

Q2 Baking a loaf of bread

Here is a simple example, in which some activities depend on others having been undertaken in order, whereas others can be done independently.

| Activity | Preceded by | Elapsed time (minutes) |
|--------------------------------------|-------------|------------------------|
| A weigh ingredients | - | 1 |
| B mix ingredients | A | 3 |
| C dough rising time | B | 60 |
| D prepare tins | - | 1 |
| E pre-heat oven | - | 10 |
| F knock back dough and place in tins | C&D | 2 |
| G 2 nd dough rising time | F | 15 |
| H cooking time | E & G | 45 |

- o Draw a fully labelled network diagram and of the activities described in the table, including the numbered nodes, the duration of each activity, the earliest start times (ESTs) and the latest finish times (LFTs). (12 marks)
- o Show the critical path. (2 marks)

Q3. An advertising campaign

A marketing department is required to prepare an advertising campaign. In the table below is the detail of the order and times of tasks that have to be completed.

| Tasks | Order / dependency | Elapsed time (hours) |
|-------|--|----------------------|
| A | Must be done first | 4 |
| B | Can only start when A is complete | 6 |
| C | Can only start when A is complete | 7 |
| D | Can only start when B is complete | 8 |
| E | Can only start when C is complete | 10 |
| F | Can only start when D and E are complete | 9 |
| G | Must wait for D, E and F to be completed | 5 |

- o Draw a fully labelled network diagram and of the activities described in the table, including the numbered nodes, the duration of each activity, the earliest start times (ESTs) and the latest finish times (LFTs). (12 marks)
- o Show the critical path. (2 marks)