

5.5B: Production Planning Activity



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5.5 PRODUCTION PLANNING: ACTIVITY B

Read the case study information below and answer the questions that follow.

NISSAN CUTS STOCK TO ALMOST ZERO



Nissan's car factories now operate on an average of just 1.6 days' worth of component and raw-material stocks. This is one of the lowest in the entire motor industry. Nissan has one of the most sophisticated **supply chain processes** in the world. Computer links with suppliers, which are often located in the same area as the Nissan factories, allow special coded messages to be sent from the Nissan production line. These contain details of the models and colours of cars being assembled.

The supplier, for example of car carpets, then knows that it must supply particular colours of carpets directly to the factory. In fact, some suppliers will make up to 120 deliveries in a day. The parts are taken straight to the assembly line – they do not pass through a traditional warehouse first. Nissan production control directors claim that this method brings huge savings in stock holding and internal stock handling as well as great space-saving advantages.

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TOYOTA PRODUCTION IS HALTED



A fire at a major supplier of parts to Toyota's Japanese factories has brought all car production to a stop. Toyota's JIT production system relies on suppliers delivering only the necessary volume of vehicle parts to the assembly line at precisely the point in the manufacturing process at which they are required. The problem is that when things go wrong at just one supplier – Aisin Seiki's fire, for example – the lack of stock of parts can lead to serious problems. Toyota always relies on one supplier for all major parts, because it

believes that this brings huge economies of scale. These suppliers not only have to agree to be 100% reliable – excluding events such as fires or earthquakes – but also accept that they must design parts for Toyota's cars themselves. This special relationship with suppliers has helped Toyota reduce its costs by \$820 million in each of the past three years. However, when adverse supply chain problems eventuate **productivity rates** fall and **capacity utilisation** at its factories can drop well below maximum **productivity levels**.

Source: www.BusinessManagementIB.com

QUESTIONS: 24 MARKS, 45 MINUTES

1. Define:
 - i. Productivity
 - ii. Labour productivity**[4 marks]**

2. Explain what is meant by the **supply chain process**. **[4 marks]**

3. Outline how productivity **and** capacity utilisation rates are determined. **[4 marks]**

4. Distinguish between **Just in Time** and **Just in Case** stock management in production planning, use examples from the case studies above. **[4 marks]**

5. Examine the relationship between productivity rates **and** capacity utilisation. **[8 marks]**

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