IB Business Management – Operations Management
5.5C: Production Planning Activity

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5.5 PRODUCTION PLANNING: ACTIVITY C

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

NEC TO RAISE CAPACITY IN CHINA

NEC, a major manufacturer of semi-conductors, has just announced that it will invest $300 million on expanding capacity in its Chinese factories. These are already working at full capacity and most analysts predict that the Chinese market will continue to expand – but possibly at a slower rate. NEC hopes that this new investment in its Chinese plants will raise monthly production from approximately 2,000,000 to 3,000,000 semi-conductor chips per month.

Also announced recently is a move by NEC to integrate its operations in southern Japan into just one factory – currently it produces at three different plants.

At present, the following data on its Chinese operations have been estimated by NEC's financial team:

- Total fixed costs: $1 million per month
- Productive capacity: 3 million units per month
- Current demand: 2.01 million units per month
- Average variable costs: $1.20
- Price: $1.80

*Source: www.**Business**Management**IB**.com*

5.5C: Production Planning Activity

QUESTIONS: 24 MARKS, 45 MINUTES

1. Calculate NEC's capacity utilisation. **[2 marks]**

2. Calculate NEC's average costs of production at 2.01 million units and at 3 million units. **[4 marks]**

3. Calculate the profit margin for NEC at its current output and its full capacity. **[4 marks]**

4. Calculate the percentage change in total profit if NEC can increase sales to equal its productive capacity. **[4 marks]**

5. Evaluate the advantages and disadvantages of NEC having high capacity utilisation in its Chinese operations. **[10 marks]**