

MOT1421
Economic Foundations
Week Four

TECHNOLOGICAL CHANGE
SELF-TEST

The self-assessment consists of 10 Questions. Each Question has a weight of 1. Your maximum score therefore is 10. A score of 6 means that you have successfully passed the test.

Question 1

What is the difference between incremental innovations and radical innovations? Explain your answer.

Question 2

What is the difference between technology-push innovation and demand-pull innovation? Explain your answer.

Question 3

“Innovation is thus just a case in which perfect competition does not yield the best outcome.” Explain why this is so.

Question 4

Consider the following Cobb-Douglas production function:

$$x = a \times L^{\alpha} \times K^{1-\alpha} \quad \text{with } \alpha = 0.55$$

During the period 1990-2017, output increased by 1.5% per year; labour input increased by 0.45% per year; and the capital stock increased by 2.4% per year. Calculate the annual average rate of TFP growth during 1990-2017.

Question 5

The notion TFP growth can be criticised in various ways. Give two limitations or problems concerning the notion of TFP growth. Explain your answers.

Question 6

What did Schumpeter mean by his notion 'creative destruction'? How is this notion related to the notion of dynamic efficiency?

Question 7

What is meant by the term 'bounded rationality'?

Question 8

What is 'tacit knowledge'? Why is it important for innovation by firms?

Question 9

What is meant by the notion 'technological lock-in'? Use the example of QWERTY in your answer.

Question 10

How does the selection mechanism work in an evolutionary market model?

End of self-test Week 4