Score: _____

1. **What does NOT happen if a firm moves from one point on an isoquant to a different point on the same isoquant?**

   A. A change in the ratio of the inputs used.

   B. A change in total costs of a firm.

   C. A change in output.

   D. A change in the technical rate of substitution.

2. **For digging a hole you need two factors of production, men *m* and shovels *s*. Suppose one man with one shovel dig one hole in a day, than the daily production function can be written as**

   A. $h = m - s$

   B. $h = m*s$

   C. $h = m/s$

   D. $h = m+s$

   E. $h = \min\{m,s\}$

3. **A firm uses two inputs. In the short run a firm has only one variable input. If its production function is concave, it follows that**

   A. its technology has increasing returns to scale.

   B. its marginal product is decreasing.

   C. its technology has decreasing returns to scale.

   D. its marginal product is increasing.

4. **In an industry there are two firms with the same technology and using the same amounts of inputs for productions. If these firms merge and the total product in the industry increases, it means that the production function (the technology) has**

   A. an increasing marginal product of all inputs.

   B. a decreasing marginal product of all inputs.

   C. decreasing returns to scale.

   D. increasing returns to scale.

5. **A production function $f(x,y)$ has increasing returns to scale if for all $t > 1$ holds that $f(tx,ty) > tf(x,y)$.**

   A. True

   B. False

6. A production function $f(x,y) = (x+y)^{1/2}$ has _____ returns to scale.

(A) increasing

(B) constant

(C) decreasing

7. Hana runs a café in her family house. Her café has a yearly income of CZK 1 000 000, her costs of input are CZK 400 000 and and she pays her employee Kristina CZK 200 000. Hana can rent the café to her friend Jan for CZK 200 000 per year and work in his café for a yearly salary of CZK 200 000. Which of the following statements is true?

(A) Hana's café has the economic profit of CZK –100 000.

(B) Hana has no implicit costs.

(C) Hana's café has the accounting profit of CZK 600 000.

(D) Hana should rent her café to Jan and work for him.

(E) Hana's implicit costs are CZK 400 000.

8. A firm uses two inputs for production. These two factors are perfect substitutes. The firm

(A) must have increasing returns of scale.

(B) must have constant returns to scale.

(C) must have decreasing returns to scale.

(D) can have any returns to scale.

9. Choose a statement that is NOT true. If all statements are true, choose the last option E.

(A) At least one of the inputs is fixed in the short run.

(B) A firm cannot be in loss in the long run.

(C) A firm can be in loss in the short run.

(D) A firm that maximizes profit in the long run must have $p*MP = w$ for all inputs.

(E) All of the above statements are true.