

Econ3311

Quiz #2

Muhammad Amreyeh

Student Name: Abd-alhadi Mari

Student Number: 1120017

1. Suppose a firm's short run cost curves were found to be: $TC = q^2 + 4q + 5$, where q is output. What is the firm's AVC to produce 20 units of output?

- (a) 480
- (b) 24
- (c) 29
- (d) 5
- (e) 24.25

$$VC = q^2 + 4q$$

$$AVC = \frac{VC}{q} = q + 4$$

$\frac{10}{10}$

2. In the short run:

- (a) All costs are fixed
- (b) All costs are variable
- (c) At least one cost is fixed
- (d) The marginal cost curve intersects the average fixed cost curve at its lowest point

3. Output for a simple production process is given by $q = 4KL$. The price of capital is \$20 per unit and capital is fixed at 5 units in the short run. The price of labor is \$8 per unit. What is the total cost of producing 100 units of output?

- (a) \$60
- (b) \$140
- (c) \$540
- (d) \$100
- (e) \$32

$$TC = 100 + 8L$$

$$= 100 + 8 \times 25$$

$$= 140$$

4. If $w = r$, then when the producer minimize cost

- (a) K must equal L .
- (b) MPL must equal MPK
- (c) $MRTS = 1$
- (d) K and L must be inputs substitutes.

$$\frac{MPL}{MPK} = \frac{w}{r}$$

$$\Rightarrow 1 = 1$$

5. Suppose a production function is given by $q = K\sqrt{L}$. The price of capital is \$10 and the price of labor is \$16. The capital is fixed at the level $K = 8$. What is the total cost function of the firm?

- (a) $TC = 16q^2 + 80$
- (b) $TC = \frac{q^2}{4}$
- (c) $TC = 4q^2 + 80$
- (d) $TC = \frac{q^2}{4} + 80$

$$q = 8\sqrt{L}$$

$$\Rightarrow q^2 = 64L$$

$$\Rightarrow L = \frac{q^2}{64}$$

$$TC = 80 + 16L$$

$$= 80 + \frac{16q^2}{64}$$

$$= 80 + \frac{q^2}{4}$$