

ANSWERS ARE IN BOLD

ECO202 PRICE THEORY

60 Minutes

Each question is worth the same. Write answers on the blue sheet.
Your exam questions are different from those of other students in the class.
Do not ask Proctor questions - just "try your best"

1. What is expected value?
 - A. Probability-weighted utility
 - B. The sum of the probability-weighted pay-offs**
 - C. The product of the probability-weighted pay-offs
 - D. The expected probabilities
2. A curve that represents all combinations of inputs that generate the same output is called:
 - A. budget line
 - B. isoquant**
 - C. production function
 - D. indifference curve
3. Suppose the firm's production function is $Q = 2L + 4K$. If the firm reduces labor input by 4 units, how much will it have to increase its capital inputs in order to maintain the same output?
 - A. 1 unit
 - B. 2 units**
 - C. 4 units
 - D. 8 units

If $L=8$, $K=4$, $Q=32$; if $L=4$ and $Q=32$, then $K=6$, so it must increase by 2
4. Which of these is a principal in principal-agent theory?
 - A. Real estate salesperson
 - B. Insurance broker
 - C. Doctor
 - D. Home-owner looking to sell her house**
5. The price of labor is \$1; the price of capital is \$3. What is the marginal rate of technical substitution at the optimum point?
 - A. 3 workers per 1 unit of capital**
 - B. 3 units of capital per 1 worker
 - C. It depends on how much output the firm produces
 - D. It depends on the shape of the isoquant

At the optimal point, the slopes of the isoquant and the isocost line must be equal. The slope of the isocost line is -3, so the quantity of K to L must be -3 [rise over run]
6. Marginal product measures:
 - A. slope of the isoquant curve
 - B. extra production from hiring 1 more unit of an input**
 - C. slope of the budget line
 - D. marginal rate of technical substitution
7. Which of these is an agent in principal-agent theory?
 - A. Your boss wanting you to work more
 - B. The tourist wanting to visit a museum
 - C. The real estate salesperson**
 - D. Home-owner looking to sell his house
8. Why don't the principal and agent cooperate perfectly?
 - A. The agent wants money
 - B. The principal wants money
 - C. The principal wants the agent to do something
 - D. The incentives of the principal and the agent are not perfectly aligned**

9. What is moral hazard?
- A. **When insured, you take more risks** B. When insured, you take fewer risks
 C. You do not bother to get insurance D. You always get insurance
10. What is asymmetric information?
- A. when the buyer has the same information as the seller
 B. when the seller has the same information as the buyer
 C. **when the seller and buyer know different things**
 D. when all information is available to everyone
11. How can market failure caused by asymmetric information be solved?
- A. **More information is made available about product quality**
 B. Less information is available to the buyer
 C. Less information is available to the seller
 D. Sellers refuse to give refunds
12. Why is there market failure in the presence of asymmetric information?
- A. Buyers are scared they will end up with a plum choice, so they bid too high
 B. Sellers are scared they will sell at too high a price
 C. **Buyers will not buy high quality products because they fear the products will be low quality**
 D. Buyers will not buy low quality products because they fear the products will be high quality
13. Why might a firm offer workers a revenue-sharing scheme?
- A. the scheme will reduce profits B. revenue will decrease
 C. **workers will put in more effort** D. workers will put in less effort
14. How might firms encourage workers to put in more effort?
- A. piece rate pay B. incentive pay C. revenue-sharing pay schemes D. **all of these options**
15. If the production is Cobb-Douglas of the form $Q = \alpha K^\beta L^\gamma$, what is the Marginal Product of capital?
- A. $\alpha K^{\beta-1} L^\gamma$ B. B IS CORRECT $\alpha \beta K^{\beta-1} L^\gamma$ C. $\alpha \gamma K^\beta L^{\gamma-1}$ D. $\alpha \beta \gamma K^{\beta-1} L^{\gamma-1}$
16. What type of economies of scale does this production function $Q = \alpha K^{0.8} L^{0.3}$ exhibit?
- A. **Increasing economies of scale** B. Decreasing economies of scale
 C. Constant economies of scale D. It depends on Q
17. What is the expected value if a coin toss pays \$5 for heads and -\$3 for tails?
- A. \$5 if it comes up heads B. \$2 C. -\$3 D. **\$1**
18. What is the expected utility if a coin toss pays \$4 for heads and \$2 for tails and the utility function is $U = Y^2$ where Y is income?
- A. 6 B. 36 C. **10** D. 24
19. If the Expected Value of a gamble is \$80 but you choose to take a sure \$70 instead, what are your risk preferences?
- A. Risk-loving B. Risk-neutral C. **Risk-averse** D. Risk-avoiding
20. If the Expected Value of a gamble is \$80 but you choose to take a sure \$70 instead, what is your risk premium?
- A. \$80 B. \$70 C. \$150 D. **\$10**

21. If the Expected Value of a gamble is \$80 but your risk premium is \$20; what is your certainty equivalent?
 A. \$80 B. **\$60** C. \$100 D. \$20
22. How might you put a price on the information an appraiser gives you about whether a painting is fake or genuine?
 A. The expected utility if the painting is fake
 B. The expected value if the painting is fake
 C. **The change in the certainty equivalent from having the information**
 D. The marginal utility of the risk premium
23. Which of the following reduces risk?
 A. Choosing an option with high variance
 B. Preferences for low risk
 C. Preferences for high risk
 D. **Diversification in production**
24. How does insurance reduce risk?
 A. **It eliminates some of the low pay-off outcomes**
 B. It reduces the probability a safe outcome will occur
 C. It reduces the probability a risky outcome will occur
 D. It increases the certainty equivalent
25. What does a production function describe?
 A. How outputs generate inputs
 B. How the marginal product of labor affects output
 C. How the marginal product of capital affects labor
 D. **How inputs generate outputs**
26. How does franchising increase profits for the franchisor (owner of a company)?
 A. The franchisee faces less risk
 B. **The franchisee works harder**
 C. The franchisee shares profits
 D. The owner sells franchises at high prices
27. Why do degrees reduce failure in the labor market?
 A. They indicate which workers are highly paid
 B. **They indicate which workers are more productive**
 C. They indicate which workers have low wages
 D. They force firms to pay more
28. What is diminishing marginal product of labor?
 A. As more output is produced, fewer workers are hired
 B. As more workers are hired, more machines need to be hired
 C. As more workers are hired, they add progressively less to output if capital is added
 D. **As more workers are hired, they add progressively less to output if capital is fixed**
29. With fixed capital, what is the optimal point for the firm?
 A. **tangency of the production function and the iso-profit line**
 B. tangency of the production function and the iso-cost line
 C. tangency of the isoquant function and the iso-profit line
 D. tangency of the production function and the marginal product of labor line

30. What is the optimality condition for input-choice for the firm?
- ratio of marginal products equals the ratio of input prices**
 - isoquant curves intersecting with budget lines
 - convex isoquants
 - differentiation of the production function
31. What are firms maximizing?
- Utility
 - Revenue
 - Output
 - Profit**
32. What is the learning curve?
- Where costs decrease as more output is produced
 - Where costs decrease as cumulative amounts of output are produced**
 - Where costs decrease as skilled workers are hired
 - Where production depends on worker skill
33. If it costs \$30 to give an x-ray, \$50 to give a physical exam, and \$60 to do x-ray and exam at the same time; what is this an example of?
- Learning curve
 - Economies of scale
 - Economies of scope**
 - Diminishing returns
34. If $MP_L = 4$, $w = \$2$, $MP_K = 6$, $r = \$3$, is the firm making the optimal input choices?
- Yes**
 - No, too much capital
 - No, too much labor
 - It depends
35. If $MP_L = 4$, $w = \$2$, $MP_K = 6$, $r = \$2$, what should the firm do?
- Hire more capital**
 - Hire more workers
 - Pay workers more
 - Pay capital more
36. Why are costs higher in the short run?
- Because all factors are variable
 - Because the firm must pay more for inputs
 - Because the firm cannot select the optimal input mix**
 - Because output is lower
37. What is an information cascade?
- Where my decision depends only on your decision**
 - Where information flows to everyone
 - Where information is available and cheap
 - Where there is too much information
38. What is a bubble?
- When prices are too high
 - When prices increase too fast
 - When prices rapidly rise, then fall**
 - When prices fall, then rise
39. A firm has \$160 per day as its budget to spend on inputs. Labor has a unit price of \$8, and capital has a unit price of \$16. What is the slope of the isocost line if labor is on the horizontal axis and capital is on the vertical axis?
- 10
 - 20
 - 2
 - 1/2**
- The slope is $-8/16$ [w/r]; remember the prices are not on the axes, the quantities are.*
40. If inputs are doubled, and output increases by one-third, is this:
- increasing returns to scale
 - decreasing returns to scale**
 - negative returns to scale
 - constant returns to scale