

DO NOT WRITE ON TEST



**Financial Math & Analysis
Concepts**

~OPEN EVENT~

190

REGIONAL 2025

CONCEPT KNOWLEDGE:

Multiple Choice (50 @ 2 points each)

_____ (100 points)

Test Time: 60 minutes

GENERAL GUIDELINES:

Failure to adhere to any of the following rules will result in disqualification:

1. Contestant must hand in this test booklet and all printouts if any. Failure to do so will result in disqualification.
2. No equipment, supplies, or materials other than those specified for this event are allowed in the testing area. No previous BPA tests and/or sample tests (handwritten, photocopied, or keyed) are allowed in the testing area.
3. Electronic devices will be monitored according to ACT standards.
4. For any interest calculations, assume a 360-day year.
5. Unless otherwise stated, assume that all plant assets were purchased on January 1.
6. Unless otherwise stated, assume that the overtime rate is 1.5 regular time pay for any hours worked in excess of 40 hours per week.

Multiple Choice Questions

Directions: Identify the letter of the choice that best completes the statement or answers the question.

1. A store bought a laptop for \$800 and wants to mark it up by 25% to sell it. What will be the selling price?
 - A. \$900
 - B. \$1,000
 - C. \$1,200
 - D. \$1,250

2. An investor bought shares for \$5,000. After one year, the value increased by 8%. What is the value after one year?
 - A. \$5,200
 - B. \$5,300
 - C. \$5,400
 - D. \$5,800

3. A company's car depreciates at a rate of 20% per year. If it was bought for \$25,000, what is its value after 1 year?
 - A. \$15,000
 - B. \$18,000
 - C. \$20,000
 - D. \$22,500

4. Jane has a bank account with an annual interest rate of 2%. If she deposits \$10,000, what is the interest after 1 year?
 - A. \$200
 - B. \$250
 - C. \$300
 - D. \$350

5. A business needs to pay a bill of \$2,500 in 30 days but decides to pay it in 20 days with a 2% discount. How much do they pay?
 - A. \$2,350
 - B. \$2,450
 - C. \$2,500
 - D. \$2,550

6. A graph shows the price of a stock increasing from \$50 to \$70 over 5 months. What is the average monthly increase?
 - A. \$4
 - B. \$5
 - C. \$6
 - D. \$7

7. A loan of \$15,000 with a 5% annual interest rate is to be repaid in one lump sum after 12 months. What is the total repayment amount?
 - A. \$15,750
 - B. \$15,500
 - C. \$16,000
 - D. \$16,250

8. A company's gross profit margin is 30% on sales of \$20,000. What is the gross profit?
 - A. \$5,000
 - B. \$6,000
 - C. \$7,000
 - D. \$8,000

9. A retail store bought a dress for \$50 and sold it for \$75. What is the markup percentage?
 - A. 40%
 - B. 50%
 - C. 60%
 - D. 75%

10. If \$200 grows to \$216 in 2 years with simple interest, what is the annual interest rate?
- A. 4%
 - B. 6%
 - C. 8%
 - D. 10%
11. A car purchased for \$20,000 depreciates 15% annually. What is its value after 2 years?
- A. \$14,450
 - B. \$15,300
 - C. \$16,150
 - D. \$17,000
12. If a business has expenses of \$5,000 and a mark-up of 20%, what is the selling price?
- A. \$5,200
 - B. \$5,500
 - C. \$6,000
 - D. \$6,500
13. A shop marks down winter coats by 25% to sell them for \$150 each. What was the original price?
- A. \$180
 - B. \$200
 - C. \$220
 - D. \$250
14. If a product's selling price is \$200 with a markup of 50%, what was the cost price?
- A. \$100
 - B. \$133.33
 - C. \$150
 - D. \$166.67

15. The company's annual profit is \$120,000. If they allocate 25% for research and development, how much is allocated?
- A. \$25,000
 - B. \$30,000
 - C. \$35,000
 - D. \$40,000
16. An investor receives a 5% return on an investment of \$10,000. What is the total amount after one year?
- A. \$10,500
 - B. \$10,600
 - C. \$10,700
 - D. \$11,000
17. A company plans to sell a product at a 30% mark up on its \$60 cost. What will be the selling price?
- A. \$72
 - B. \$78
 - C. \$84
 - D. \$90
18. If a \$200 item is sold with a 25% discount, what is the sale price?
- A. \$150
 - B. \$160
 - C. \$175
 - D. \$180
19. A car worth \$28,000 depreciates 15% per year. What will its value be after one year?
- A. \$23,800
 - B. \$24,200
 - C. \$25,000
 - D. \$25,600

20. Last month, Jamie's credit card showed a balance of \$450.22, new charges of \$212.45, an annual fee of \$50, a finance charge of \$12.30, and a payment of \$200. What is Jamie's new balance?
- A. \$456.12
 - B. \$500.22
 - C. \$524.97
 - D. \$525.22
21. Max had a balance of \$600 on his credit card. After making \$150 in new purchases and a payment of \$350, plus a finance charge of \$10 and a service fee of \$20, what is his new balance?
- A. \$430
 - B. \$440
 - C. \$450
 - D. \$460
22. Lee's credit card had a balance of \$300. She made purchases totaling \$120, a finance charge of \$5, and a payment of \$200. Additionally, there was a cash advance fee of \$15. What is the new balance?
- A. \$225
 - B. \$240
 - C. \$245
 - D. \$250
23. The launch of a new product is advertised through leaflets inserted in a city newspaper, costing \$4,500 per run. The newspaper reaches 12,000 households. What is the cost per household?
- A. \$0.35
 - B. \$0.36
 - C. \$0.38
 - D. \$0.40

24. Lily had 50 square yards of luxury vinyl tile installed in her kitchen. The tile cost \$12.99 per square yard, the underlayment cost \$2.50 per square yard, and installation was \$5 per square yard. The sales tax rate is 5.5% and is not applied to the labor. What was the total cost of the installation?
- A. \$630.75
 - B. \$1,050.62
 - C. \$1,067.10
 - D. \$1,275.25
25. An employer offers life insurance with a monthly premium of \$40 per employee. Employees pay 60% of the premium. What is the annual premium paid by an employee?
- A. \$192.00
 - B. \$288.00
 - C. \$384.00
 - D. \$480.00
26. The monthly premium cost for a comprehensive health plan is \$100 per employee. If employees contribute 75% of the premium, what is the total annual cost for an employee?
- A. \$900.00
 - B. \$1,200.00
 - C. \$600.00
 - D. \$1,800.00
27. A firm provides accident insurance with a monthly premium of \$30 per employee. If the employee pays 80% of the premium, what is the total annual premium paid by an employee?
- A. \$144.00
 - B. \$288.00
 - C. \$432.00
 - D. \$576.00
28. Marcus's account showed a balance of \$560.33 in the morning. Throughout the day, he used his debit card for purchases amounting to \$112.50, \$46.78, and \$89.95. He also transferred \$150 to his checking account from savings. What was his ending balance?
- A. \$249.10
 - B. \$311.10
 - C. \$461.10
 - D. \$641.10

29. Naomi had \$890.76 in her check register at the beginning of the day. During the day, she made three debit card transactions totaling \$58.39, \$678.20, and \$50.17. She also added \$300 from a bonus to her checking account. What was her balance at the end of the day?
- A. \$104.00
 - B. \$300.00
 - C. \$404.00
 - D. \$786.76
30. Owen started the day with a balance of \$1,150.29 in his checking account. He spent \$215.75, \$80.50, and \$365.25 with his debit card and received a transfer of \$500 from an external account. What was Owen's balance at the end of the day?
- A. \$500.00
 - B. \$488.79
 - C. \$661.50
 - D. \$988.79
31. A bookstore purchased novels to sell for \$8 and sold them for \$12. If the markup is based on cost, what markup percentage is the bookstore charging?
- A. 30%
 - B. 40%
 - C. 50%
 - D. 60%
32. An electronics retailer bought headphones to sell for \$60 and sold them for \$90. If the markup is based on cost, what markup percentage is the retailer charging?
- A. 25%
 - B. 40%
 - C. 50%
 - D. 60%
33. Sarah earns \$3.00 for each approved design she creates. In one week, she submitted 150 designs, but 10 were not approved. What was Sarah's gross pay for that week?
- A. \$420.00
 - B. \$450.00
 - C. \$480.00
 - D. \$420.00

34. Jerry is compensated \$2.50 for each sellable gadget he assembles. He assembled 400 gadgets in a week, with 25 being defective. What was Jerry's gross income for the week?
- A. \$375.00
 - B. \$937.50
 - C. \$1,000.00
 - D. \$1,062.50
35. What are the gross earnings for an employee who works 37 hours and is paid \$9.50/hour?
- A. \$314.50
 - B. \$351.50
 - C. \$392.75
 - D. \$411.25
36. What are the gross earnings for an employee who works 40 hours and is paid \$15.75/hour?
- A. \$630.00
 - B. \$672.50
 - C. \$701.25
 - D. \$740.00
37. Mina has a regular pay rate of \$15.00 per hour. She receives time-and-a-half for overtime and double time for Sundays. Her schedule last week was: Monday 9 hours, Tuesday 9 hours, Wednesday 8 hours, Thursday 8 hours, Friday 8 hours, Sunday 6 hours. What was her gross pay?
- A. \$768.00
 - B. \$825.00
 - C. \$954.00
 - D. \$1,032.00
38. Leo makes \$18.50 per hour regularly. He gets time-and-a-half for overtime and double time for Saturdays. His work schedule last week included: Monday 8 hours, Tuesday 8 hours, Wednesday 8 hours, Thursday 10 hours, Friday 10 hours, Saturday 5 hours. What was his gross pay?
- A. \$945.00
 - B. \$1,036.00
 - C. \$1,120.50
 - D. \$1,215.50

39. Nina is paid \$17 per hour regularly. She receives time-and-a-half for overtime hours and double time for work on holidays. Last week, she worked: Monday 8 hours, Tuesday 8 hours, Wednesday 8 hours, Thursday 10 hours, Friday 10 hours, a holiday on Saturday 6 hours. What was her gross pay?
- A. \$935.00
 - B. \$986.00
 - C. \$1,324.00
 - D. \$1,412.00
40. A local coffee shop purchased a commercial espresso machine for \$4,800. The shop expects to use the machine for six years and expects to sell it for \$800 at the end of that time. Using straight-line depreciation, how much will the coffee shop depreciate the espresso machine each year?
- A. \$600.00
 - B. \$666.67
 - C. \$700.00
 - D. \$750.00
41. A gallon of premium orange juice is priced at \$5.99. A half-gallon of the same orange juice is \$3.49. How much can be saved by buying 1 gallon of orange juice instead of two half gallons?
- A. \$0.99
 - B. \$1.09
 - C. \$1.19
 - D. \$1.29
42. You obtained a loan from a bank for \$3,000 for one year at an annual interest rate of 12%. What is the total amount of interest owed on the loan?
- A. \$180
 - B. \$300
 - C. \$360
 - D. \$420

43. You secured a personal loan of \$5,000 for 9 months at an annual interest rate of 10%. What is the total amount of interest owed on the loan?
- A. \$250
 - B. \$300
 - C. \$375
 - D. \$450
44. You financed a new laptop with a \$1,200 loan for 3 months at an annual interest rate of 8%. What is the total amount of interest owed on the loan?
- A. \$24
 - B. \$48
 - C. \$96
 - D. \$192
45. Derek attended a 5-day industry convention. He was reimbursed for 200 miles of travel to and from the convention by personal car at \$0.45 a mile. He also received a \$140 per diem per full day (Derek does not receive a per diem for partial days). What was his total reimbursement for the convention?
- A. \$700.00
 - B. \$790.00
 - C. \$820.00
 - D. \$890.00
46. A small business's web design firm charged \$2,500 for website development and \$55 a month for maintenance. They also pay \$15 annually for domain registration and \$50 a month for hosting and internet service. What is the total cost for the first year to the business?
- A. \$3,185
 - B. \$3,420
 - C. \$3,775
 - D. \$3,890

47. A local restaurant's website development cost was \$2,200, with a monthly maintenance fee of \$48. They pay \$18 annually for domain registration and \$60 a month for web server space and internet service. What is the restaurant's total web-related cost for the first year?
- A. \$3,234
 - B. \$3,456
 - C. \$3,514
 - D. \$3,900
48. The purchase price of a used motorcycle is \$8,500. Other costs include a delivery fee of \$200 and sales tax of 5%. The buyer made a down payment of \$2,500. What is the balance due of the motorcycle?
- A. \$6,435
 - B. \$6,625
 - C. \$7,435
 - D. \$7,935
49. Mark invested \$3,000 in a 5-year CD that paid 4.5% annual interest. When he withdrew \$500 at the end of 4 years, his early withdrawal penalty was 6 months' interest. What was the amount of the penalty?
- A. \$67.50
 - B. \$33.75
 - C. \$135.00
 - D. \$202.50
50. Noah invested \$7,000 in a 7-year CD that paid 6% annual interest. When he withdrew \$3,000 at the end of 6 years, his early withdrawal penalty was 3 months' interest. What was the amount of the penalty?
- A. \$105.00
 - B. \$210.00
 - C. \$315.00
 - D. \$420.00