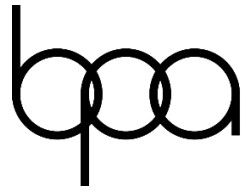


DO NOT WRITE ON TEST



**BUSINESS
PROFESSIONALS
of AMERICA**
Giving Purpose to Potential

FINANCIAL MATH AND ANALYSIS

~OPEN EVENT~

(190)

REGIONAL 2026

TOTAL POINTS

_____ 100 Points

Test Time: 60 minutes

GENERAL GUIDELINES

Failure to follow any of these rules may result in disqualification:

1. **Submission Requirements:** Contestant must submit this test booklet along with any printouts.
2. **Permitted Items:** Only the equipment, supplies, and materials specified for this event are allowed in the testing area. Previous BPA tests and sample tests (whether handwritten, photocopied, or typed) are not permitted.
3. **Electronic Devices:** 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, more than 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 restaurant's weekly payroll is \$12,000. If they allocate 30% for kitchen staff, how much is allocated for them?
 - A. \$3,600
 - B. \$4,000
 - C. \$3,800
 - D. \$4,200
2. A savings account balance doubles with compound interest in 8 years. What is the approximate annual interest rate?
 - A. 7%
 - B. 9%
 - C. 11%
 - D. 13%
3. A company sold items for \$10,000 with a cost of goods sold of \$6,000. What is the gross margin?
 - A. \$3,000
 - B. \$4,000
 - C. \$5,000
 - D. \$6,000
4. A \$1,000 bond pays 5% annual interest. What is the total interest after 4 years?
 - A. \$200
 - B. \$250
 - C. \$300
 - D. \$350
5. A firm's inventory worth \$50,000 depreciates by 10% over a year. What is the value at the end of the year?
 - A. \$45,000
 - B. \$40,000
 - C. \$35,000
 - D. \$50,000
6. A business buys equipment for \$15,000 with a yearly depreciation of 20%. The salvage value is \$3,000, and they anticipate having the equipment for 5 years. What is its value after 3 years?
 - A. \$8200
 - B. \$5500
 - C. \$6200
 - D. \$7800

7. If \$500 is invested in a bond paying 5% annual interest, what is the total interest after 5 years?
 - A. \$175
 - B. \$150
 - C. \$125
 - D. \$200
8. What is the future value of a \$1,000 investment at an annual interest rate of 6% compounded annually for 4 years?
 - A. \$1,262.48
 - B. \$1,000
 - C. \$1,200
 - D. \$1,500
9. For a graph showing a linear increase in sales from \$200 to \$500 over 6 months, what is the average monthly increase?
 - A. \$50
 - B. \$60
 - C. \$70
 - D. \$100
10. An investor receives a 5% return on an investment of \$10,000. What is the total amount after one year?
 - A. \$10,600
 - B. \$10,500
 - C. \$10,700
 - D. \$11,000
11. Ana's credit card had a previous balance of \$780.50, with new purchases totaling \$299.99, a late fee of \$25, a finance charge of \$8.45, and she made a payment of \$400. What is her new balance?
 - A. \$713.94
 - B. \$700.00
 - C. \$718.45
 - D. \$713.45
12. A credit card statement shows a previous balance of \$1,230.75, new purchases of \$524.25, a finance charge of \$15.92, a payment of \$700, and a late fee of \$35. What is the new balance?
 - A. \$1,050.92
 - B. \$1,056.67
 - C. \$1,105.92
 - D. \$1,100.92

13. A credit card had a previous balance of \$500, with new purchases of \$150, a finance charge of \$5, a returned item credit of \$50, and a payment of \$200. What is the new balance?
- A. \$405
 - B. \$400
 - C. \$395
 - D. \$390
14. Chloe's credit card statement showed a balance of \$250, new purchases of \$100, a finance charge of \$4.50, and a payment of \$150. What is the new balance?
- A. \$204.50
 - B. \$205
 - C. \$200
 - D. \$199.50
15. An IT company purchased a site license for development tools that retails for \$250 per user. They paid \$200,000 for their 1,000 engineers. How much did they save by buying the site license?
- A. \$50,000
 - B. \$100,000
 - C. \$150,000
 - D. \$200,000
16. A university acquired a site license for academic research software that retails for \$55.55 per license. They paid \$88,880 for use on 2,500 student and faculty computers. How much did they save by buying the site license?
- A. \$19,995
 - B. \$29,995
 - C. \$39,995
 - D. \$49,995
17. A healthcare provider purchased a site license for medical record software that retails for \$499.99 per installation. They paid \$249,995 for use on 700 workstations. How much did they save by buying the site license?
- A. \$99,998
 - B. \$149,998
 - C. \$199,998
 - D. \$249,998
18. A tech startup acquired a site license for business management software that retails for \$150 per user. They paid \$22,500 for use on 200 employees. How much did they save by buying the site license?
- A. \$7,500
 - B. \$15,000
 - C. \$22,500
 - D. \$30,000

19. For the Williams family, the first year home operating expenses are projected as: property tax, \$4,000; insurance, \$500; utilities, \$2,000; maintenance, \$1,500; mortgage interest, \$9,000; lost interest on down payment, \$700. Their expected income tax savings amount to \$2,500. What is the net cost of owning their home in the first year?
- A. \$14,200
 - B. \$15,700
 - C. \$15,200
 - D. \$16,200
20. The Davies family's anticipated first-year home expenses include: property tax, \$3,600; insurance, \$470; utilities, \$1,750; maintenance, \$1,250; mortgage interest, \$7,500; lost interest on down payment, \$450. They estimate their income tax savings will be \$1,900. What will be the net cost of owning the home in the first year?
- A. \$12,120
 - B. \$12,670
 - C. \$13,120
 - D. \$11,670
21. The Nguyen family forecasts their home operating costs for the first year as: property tax, \$2,500; insurance, \$400; utilities, \$1,200; maintenance, \$900; mortgage interest, \$6,800; lost interest on down payment, \$350. They calculate their income tax savings to be \$1,500. What is the net cost of home ownership in the first year?
- A. \$10,650
 - B. \$9,550
 - C. \$10,150
 - D. \$9,250
22. Leah had \$180.30 in change at the start of her shift. At closing, the cash register had \$3,695.80. The day's totals indicated receipts of \$3,550.50 and payouts of \$30.00. How much was the cash over or short?
- A. \$5.00 over
 - B. \$5.00 short
 - C. \$45.30 over
 - D. \$45.30 short
23. Dan started his workday with \$250 in change in the cash register. At the end of the day, the register showed \$5,310.25. He received \$5,045.00 in receipts and made payouts of \$15.75. How much was the cash over or short?
- A. \$31.00 over
 - B. \$31.00 short
 - C. \$50.00 over
 - D. \$50.00 short

24. Emma earned \$4,500 last month. She paid an overall FICA tax rate of 7.65% that consists of a 6.2% social security tax and a 1.45% Medicare tax. Federal income taxes withheld from her wages were \$920. What total amount of taxes was deducted from her pay last month?
- A. \$344.25
 - B. \$1,264.25
 - C. \$1,084.25
 - D. \$2,420.25
25. An invoice for \$2,560 dated April 3 has terms of sale of 2/10, n/30. What is the amount of the cash price if the invoice is paid on April 12?
- A. \$2,500
 - B. \$2,560
 - C. \$2,549.20
 - D. \$2,508.80
26. A bill for \$4,725 dated June 15 has terms of sale of 3/10, n/45. What is the cash price if the bill is paid on June 24?
- A. \$4,583.25
 - B. \$4,725
 - C. \$4,602.75
 - D. \$4,500
27. An invoice for \$5,890 dated March 1 has terms of sale of 5/10, n/50. What is the cash price if the invoice is paid on March 9?
- A. \$5,595.50
 - B. \$5,890
 - C. \$5,845.50
 - D. \$5,600
28. A purchase of \$1,750 dated January 20 with terms of sale of 2/10, 1/15, n/60. What is the amount if paid on January 29?
- A. \$1,750.00
 - B. \$1,715.00
 - C. \$1,708.25
 - D. \$1,729.50
29. An invoice for \$6,300 dated July 4 with terms of sale of 2/10, n/45. What is the cash price if the invoice is paid on July 13?
- A. \$6,174
 - B. \$6,300
 - C. \$6,210
 - D. \$6,294

30. In developing a 9,000-line digital tool, one developer dedicated 450 hours at \$20 per hour, and another spent 430 hours at \$24 per hour. What was the average development cost per line?
- A. \$3.00
 - B. \$3.50
 - C. \$4.00
 - D. \$2.15
31. A programming project resulted in a 4,500-line codebase. One programmer contributed 280 hours at \$26.50 per hour, while the other contributed 270 hours at \$22 per hour. What was the average programming cost per line for the project?
- A. \$2.97
 - B. \$3.00
 - C. \$3.60
 - D. \$4.10
32. Alex acquired 100 shares of technology stock at \$55.90 per share. The commission for buying was \$50. Alex sold the shares at \$75.20, incurring a sale commission of \$60. What was the profit or loss from this investment?
- A. \$1,920 profit
 - B. \$1,920 loss
 - C. \$1,810 profit
 - D. \$1,810 loss
33. Emily invested in 400 shares of energy stock at \$8.25 per share. The buying commission was \$160. She sold the shares at \$10.75, with a selling commission of \$190. What was the financial outcome of this investment?
- A. \$810 profit
 - B. \$810 loss
 - C. \$970 profit
 - D. \$970 loss
34. Tom bought 150 shares of startup stock at \$22.40. The commission on the purchase totaled \$75. He later sold the stock at \$30.00, with a commission on the sale of \$90. What was Tom's profit or loss?
- A. \$1,035 profit
 - B. \$1,035 loss
 - C. \$1125 profit
 - D. \$1125 loss
35. Liam wants to earn 10% annual net income on his \$20,000 cash investment in an apartment. His annual expenses for maintaining the apartment are \$4,200. What monthly rent must Liam charge to meet his earning goal?
- A. \$716.67
 - B. \$616.67
 - C. \$516.67
 - D. \$416.67

36. Patricia had 60 square yards of plush carpet installed in her home theater. The carpet cost \$18.99 per square yard, the padding cost \$4 per square yard, and installation was \$5.50 per square yard. The sales tax rate is 5%, not applied to labor. What was the total cost of the installation?
- A. \$1,673.40
 - B. \$1,778.37
 - C. \$1,895.60
 - D. \$2,010.70
37. A company offers health insurance with a monthly premium of \$50 per employee. If the employee covers 70% of the premium, what is the total annual premium paid by an employee?
- A. \$210.00
 - B. \$420.00
 - C. \$630.00
 - D. \$840.00
38. Sophie redeemed 400 shares of a mutual fund at \$16.50 per share. Her total investment in the shares was \$6,200. What was her profit or loss?
- A. \$400 profit
 - B. \$400 loss
 - C. \$600 profit
 - D. \$600 loss
39. Lara's check register had a balance of \$1,020.50 at the start of the day. She made debit card purchases of \$125.67, \$230.85, and \$340.98 during the day. She also deposited \$400 from her savings into her checking account. What was her ending balance?
- A. \$723.00
 - B. -Red(\$723.00)
 - C. \$823.00
 - D. -Red(\$823.00)
40. Tech Solutions sold these items to a school: 25 laptops @ \$549.99 each, 10 projectors @ \$249.99 each, and 5 wireless routers @ \$59.99 each. What was the total of the sales invoice before tax?
- A. \$15,749.50
 - B. \$16,549.60
 - C. \$14,499.75
 - D. \$17,499.60
41. Auto Parts Co. sold these items to a repair shop: 40 oil filters @ \$8.99 each, 30 brake pads @ \$22.50 each, and 20 headlight bulbs @ \$19.99 each. What was the total of the sales invoice before tax?
- A. \$1,348.60
 - B. \$1,434.40
 - C. \$2,047.60
 - D. \$2,597.80

42. Premier Paints sold these items to a contractor: 45 gallons of exterior paint @ \$29.99 a gallon, 35 gallons of primer @ \$22.99 a gallon, and 25 paint brushes @ \$5.99 each. What was the total of the sales invoice before tax?
- A. \$2,548.20
 - B. \$2,093.30
 - C. \$3,074.55
 - D. \$2,303.95
43. You deposit \$600 in a five-year term deposit that pays 3.5% compounded quarterly. What is the effective annual interest rate, to the nearest tenth percent?
- A. 3.60%
 - B. 3.80%
 - C. 3.50%
 - D. 4.00%
44. What is the property tax on a commercial property valued at \$500,000 with a tax rate of \$45.25 per \$1,000?
- A. \$22,625.00
 - B. \$22,250.00
 - C. \$21,875.00
 - D. \$21,500.00
45. What is the property tax due on an office building valued at \$800,000 with a tax rate of \$50.00 per \$1,000?
- A. \$40,000.00
 - B. \$39,000.00
 - C. \$38,000.00
 - D. \$37,000.00
46. James's pension scheme pays him 1.75% of his average salary for the last three years for each year of service. His salaries were \$58,000, \$60,000, and \$63,000 respectively. Retiring after 28 years, what will his monthly pension amount to?
- A. \$2,780.42
 - B. \$2,463.61
 - C. \$3,069.58
 - D. \$3,214.17
47. Emily's pension fund grants her 2.1% of her average salary for the last three years for each year of service. In the last three years, she earned \$56,500, \$58,750, and \$61,250. She will retire after 32 years of service. What monthly pension will she receive?
- A. \$3,100.21
 - B. \$3,294.89
 - C. \$3,401.29
 - D. \$3,551.83

48. Fresh Farm Produce markets their products through a monthly magazine ad costing \$300 per month. As a frequent advertiser, they are given a 25% discount. What is Fresh Farm's total advertising cost for one year?
- A. \$2,700
 - B. \$3,600
 - C. \$2,700
 - D. \$4,500
49. Elite Fitness Gym advertises daily in an online health and wellness publication. The standard ad rate is \$50 a day. Elite Fitness receives a 10% discount due to their ongoing contract. What is the cost for Elite Fitness to advertise for one year?
- A. \$23,425
 - B. \$18,250
 - C. \$32,850
 - D. \$16,425
50. Linda went to a 4 ½ day training session. She was reimbursed for driving 150 miles to and from the session by personal car at \$0.38 a mile. She also received a \$130 per diem per full day (Linda does not receive per diem for partial days). What was her total reimbursement?
- A. \$420.00
 - B. \$577.00
 - C. \$610.00
 - D. \$670.00