

# FINANCIAL MATH & ANALYSIS CONCEPTS (190)

—OPEN EVENT—

**REGIONAL – 2016**

DO NOT WRITE ON TEST BOOKLET

*TOTAL POINTS*

\_\_\_\_\_ (*100 points*)

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

- 1. Contestant must hand in this test booklet and all printouts. 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 or facsimile (handwritten, photocopied, or keyed) are allowed in the testing area.**
- 3. Electronic devices will be monitored according to ACT standards.**

No more than 60 minutes testing time

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## GENERAL INSTRUCTIONS

The number of decimal places used in calculations and in the reporting of your answers is very important. Below are guidelines to use as you take this test. If a problem varies from these guidelines, it will be noted in the problem.

### PAYROLL QUESTIONS

- Do not round the overtime rate.
- Overtime is paid for any hours over 40 worked in a week, *unless otherwise stated in the problem.*
- Normal work week is 40 hours, *unless otherwise stated in the problem.*

### PERCENTAGE PROBLEMS

- Round to the nearest tenth when working with percentages.

*Example:* Use 2.3% NOT 2%

*Example:* An answer of .9638 should be written as 96.4%

### FRACTIONS

- All problems with fractions are to be reduced to their lowest terms.

### INTEREST

- All interest rates are stated in one-year simple interest, *unless otherwise noted.*
- Interest is to be calculated on 365 days.

### DOLLAR AMOUNTS

- All dollar amounts must be rounded to the second place (nearest cent).

*Example:* \$35.9765 to \$35.98

**Multiple Choice: Identify the letter that best completes each sentence or answers the question.**

1. Professional Business Associates spent the following time hiring a Financial Analyst in its corporate offices: 1.7 hours reviewing the application, 2.7 hours checking references, .9 hours interviewing, and 3.5 hours approving the budget. These costs were charged at \$250 per hour. Overhead costs of adding the web specialist were \$689.00. What was the total cost of hiring the web specialist?
  - a. \$1,440.00
  - b. \$2,880.00
  - c. \$2,200.00
  - d. \$2,889.00
  
2. Overtime pay that is calculated at  $1\frac{1}{2}$  times the regular rate is called
  - a. time and a half pay.
  - b. hourly pay plus benefits.
  - c. commission + hourly.
  - d. gross pay.
  
3. The monthly health insurance premium provided by Hana's employer is \$766, and Hana pays 22% of the cost while her spouse Paul pays, 20%. What annual amount does Hana pay for health insurance?
  - a. \$168.52
  - b. \$153.20
  - c. \$2,022.24
  - d. \$1,838.40
  
4. Ronnie Johansen owns 1,040 shares of Zipple, \$120 par value common stock. The stock pays a dividend of 5.25%. What total amount will Ronnie receive in dividends?
  - a. \$54.60
  - b. \$65.52
  - c. \$6,552
  - d. \$13,104
  
5. Which of the following services are typically available to customers with online banking?
  - a. transfer money between accounts
  - b. have bills sent electronically instead of through the mail
  - c. have account access 24 hours a day, 7 days a week
  - d. all of the above.
  
6. A scooter sells for \$1,489 and a helmet is an additional \$123. The sales tax is 5.1%. What is the total cost of the equipment?
  - a. \$1,529.79
  - b. \$1,612.00
  - c. \$8,221.12
  - d. \$1,694.21

Use the following information for questions 7-9. Isabella has not been able to maintain the \$1,000 minimum balance required to avoid fees on her checking account. She wants to switch to a different account with a fee of \$.20 per check and a \$12.50 monthly maintenance fee. In November she wrote 14 checks; December, 19 checks; January, 23 checks; February, 24 checks.

7. Using the information, above what is the mean number of checks Isabella wrote per month during the last four months?
  - a. 20
  - b. 21
  - c. 22
  - d. 25
  
8. Based upon the mean, estimate how much Isabella expects to pay in per-check fees each month after she switches to the new account.
  - a. \$4.00
  - b. \$10.00
  - c. \$12.50
  - d. \$14.20
  
9. Estimate the total monthly fees Isabella will pay each month for the new checking account.
  - a. \$14.00
  - b. \$12.50
  - c. \$16.50
  - d. \$18.20
  
10. Which term describes the amount of money on which a person must pay taxes?
  - a. withholding
  - b. net income
  - c. taxable income
  - d. pension
  
11. Susie Anderson bought a used car for \$9,650. She made a \$1,200 down payment and paid the balance in 24 monthly payments of \$420.56 each. What was the finance charge on the loan?
  - a. \$443.44
  - b. \$1,630
  - c. \$1,643.44
  - d. \$8,450
  
12. Which of the following is an example of a job benefit?
  - a. paid holidays
  - b. recreational facilities
  - c. child care
  - d. all of the above

Use the following information to answer questions 13-18. Alexandra deposits \$775 in an account that pays 4.24% simple interest for four years. Jacob deposits \$775 in an account that pays 2.24% simple interest for one year.

13. What is Alexandra's interest after four years?
  - a. \$48.81
  - b. \$131.44
  - c. \$262.88
  - d. \$906.44
  
14. What is Alexandra's balance after four years?
  - a. \$48.81
  - b. \$131.44
  - c. \$262.88
  - d. \$906.44
  
15. How much interest did Alexandra's account earn the first year?
  - a. \$32.86
  - b. \$48.81
  - c. \$131.44
  - d. \$262.88
  
16. How much interest did Alexandra's account earn the fourth year?
  - a. \$32.86
  - b. \$48.81
  - c. \$131.44
  - d. \$262.88
  
17. What was Jacob's interest after the first year?
  - a. \$48.81
  - b. \$17.36
  - c. \$131.44
  - d. \$262.88
  
18. What was Jacob's balance after the first year?
  - a. \$48.81
  - b. \$32.86
  - c. \$906.44
  - d. \$792.36
  
19. Addison Anthony is paid piece-rate for each of the 120 handmade bags she produces in a 40-hour week. She receives gross wages of \$625. What is her per piece rate?
  - a. \$5.21
  - b. \$10.42
  - c. \$0.13
  - d. \$0.26

20. Hannah Dylan is a senior who earned \$7,890 working at the local bakery, over the course of the year. Her employer deducted \$880 in withholding taxes. She has no adjustments to income or additional income. Her parents claim her as a dependent on their tax return. What is the maximum refund Hannah could receive?
- a. \$880
  - b. \$1,760
  - c. \$3,500
  - d. \$7,010

Use the following information to answer questions 21-23.

Lucas is considering moving into a one-bedroom apartment in Bengal Heights. The apartment has a monthly rent of \$1,300. The fee Lucas has been quoted includes the following: an application fee of 2% of one month's rent; a credit application fee of \$10; a security deposit of one month's rent; the last month's rent; and broker's fees of 12% of one year's rent.

21. How much will Lucas pay for the application fee?
- a. \$10
  - b. \$26
  - c. \$52
  - d. \$156
22. How much will Lucas pay Bengal Heights for the Broker's Fee?
- a. \$130
  - b. \$156
  - c. \$1,560
  - d. \$1,872
23. How much is Lucas expected to pay up front in order to rent this apartment?
- a. \$4,092
  - b. \$4,508
  - c. \$5,808
  - d. \$5,888
24. Elijah earned gross income of \$35,200 last year. If he took the standard deduction of \$5,450 and one exemption for \$3,500, what was his taxable income for the year?
- a. \$8,950
  - b. \$26,250
  - c. \$29,750
  - d. \$31,700
25. Which of the following describes the length of time that money must be left on deposit in a CD?
- a. maturity date
  - b. APR
  - c. term
  - d. length of deposit

26. The total amount of money that an employee is paid before deductions is called
- salaried.
  - net pay.
  - allocated.
  - gross pay.
27. Nevaeh can rent a high speed laser printer for \$13.75 a day or buy it for \$134.99. How many days of renting will it take for the rental cost to equal or exceed the purchase price?
- 8 days
  - 10 days
  - 15 days
  - 1 week
28. Karlie works as an intern for an event planning company. Last month she worked eight days and received an average tip of \$21 from each of 16 different events. What was her tip income for the month?
- \$336.00
  - \$168.00
  - \$128.00
  - \$286.00
29. Amando Zekum received a cost of living adjustment of 2.3% on his weekly gross wages of \$760. How much will Amando earn per week after the pay increase?
- \$17.48
  - \$742.52
  - \$777.48
  - \$744.80
30. Professional Business Associates shared 15% of its \$2,000,000 profit with its 120 employees. What was the total amount of profit shared?
- \$30,000
  - \$60,000
  - \$300,000
  - \$600,000
31. As an employee of Professional Business Associates you will share in 15% of the \$2,000,000 profit. You are one of 120 employees. What is your share?
- \$2,521
  - \$2,500
  - \$5,000
  - \$5,042
32. Cupcakes by Design offered one of its best customers a 15% discount on a \$180 order for an upcoming picnic. What was the amount of the discount?
- \$27
  - \$36
  - \$153
  - \$207

33. Jackson put \$500 into a five-year Certificate of Deposit earning 3.25% annually. What is Jackson's interest for 2015?
- \$1.63
  - \$8.13
  - \$16.25
  - \$81.25
34. Elizabeth earns \$164.75 a week at a part-time job. Of this amount, her employer deducts \$28.71 for federal and state withholding taxes, \$1.24 for local withholding tax, and 7.65% for social security and Medicare taxes. What are Elizabeth's total deductions each week, and what is her weekly net pay?
- \$29.95, \$134.80
  - \$42.55, \$122.20
  - \$12.60, \$122.20
  - \$42.55, \$134.80
35. Of 120 employees in an organization, 90 attended the company picnic. What percent of the employees attended the picnic?
- 70%
  - 75%
  - 90%
  - 133%
36. Events by Jose, over the course of 24 months, had a profit of \$9,000 in 2014 and \$10,500 in 2015. What was the increase from year to year?
- \$62.50
  - \$1,500
  - \$3,000
  - \$36,000
37. Kevin Tucker typed 50 letters per day for six days. Janice Leaf typed 50 letters per day for five days. What is the total number of letters typed by both?
- 350
  - 600
  - 100
  - 550
38. Mr. McDonald's credit card statement for June 30 showed a previous balance of \$210.40 and new purchases of \$22.31 on 6/12, \$10.19 on 6/18, and \$34.85 on 6/27. He made a payment of \$210.40 on 6/27. What is Mr. McDonald's new balance?
- \$ 67.35
  - \$ 34.42
  - \$141.13
  - \$ 46.96



39. A sum of money given at the beginning of an installment plan is known as the
- collateral.
  - down payment.
  - deposit.
  - finance charge.
40. If \$15,000 is divided among Raijh, Sheldon and Corrine in the proportions 3, 5, and 9, respectively, how much will Raijh receive?
- \$2,647.06
  - \$4,411.75
  - \$7,941.18
  - \$1,900.06
41. Mireya types 50 words per minute. Marie types 75 words per minute. They each typed a page with 300 words. Mireya started 1 minute before Marie. Who finished first?
- Mireya
  - Marie
42. How many hours equal 9,000 seconds?
- 1.5
  - 2
  - 2.5
  - 3
43. David redeemed 500 shares of a mutual fund at a net asset value of \$9.79. His total investment in the shares was \$4,412.38. What was Donald's profit or loss on the sale?
- \$482.62 profit
  - \$462.82 profit
  - \$482.62 loss
  - 462.82 loss
44. Two entrepreneurs, James and Clay, own a tech start-up. They sell a one-third interest to Tyler. If the part of the startup that Clay and James still own is worth a total of \$15,000, how much was the original value?
- \$22,500
  - \$30,000
  - \$45,000
  - \$75,000
45. Kayla's credit card statement for the month of February showed a membership fee of \$50, a late fee of \$25, a finance charge of \$18.72, and two over-the-limit fees of \$35 each. What was the total cost of the card to Kayla in February?
- \$78.72
  - \$128.72
  - \$129.00
  - \$163.72

46. Garrett's phone plan costs \$39.99 a month and includes 450 local minutes. Each minute over 450 costs Garrett \$0.19, and roaming costs an additional \$0.52 a minute. Garrett used his cell phone 480 minutes last month, 80 of which were made outside of the home coverage area. If taxes at 16% were added to the bill, how much was the customer's cell phone bill last month?
- a. \$94.64
  - b. \$53.00
  - c. \$87.29
  - d. \$101.26
47. One quart is equivalent to 32 oz., which is equivalent to 0.95 L. How many liters are in a cup that holds 48 oz. of fountain drink?
- a. 1.9 L
  - b. 1.579 L
  - c. 1.425 L
  - d. 0.633 L
48. After the local surf shop went bankrupt, the trustee sold the firm's assets for \$156,400. The legal costs of the bankruptcy and other claims that had to be paid before creditors totaled \$68,800. Creditor's claims totaled \$212,600. How much will a creditor get who has a claim of \$43,100?
- a. \$45,654
  - b. \$43,100
  - c. \$31,707
  - d. \$17,759
49. Julie Harris spent three days at professional development training. She was reimbursed at \$0.55 a mile for using her personal car to travel 410 miles to and from the seminar. She was also paid \$75 per diem. What was Julie's total reimbursement?
- a. \$300.50
  - b. \$375.00
  - c. \$450.50
  - d. \$676.00
50. The mortgage company lender, ATEC, discounted a \$2,500 note for you at 18% interest for four months. Find the proceeds of the note that you receive?
- a. \$2,950
  - b. \$2,350
  - c. \$2,300
  - d. \$150