FINANCIAL MATH & ANALYSIS CONCEPTS (190)

—OPEN EVENT—

REGIONAL – 2019

DO NOT WRITE ON TEST BOOKLET

TOTAL POINTS _____ *(500)*

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

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.*
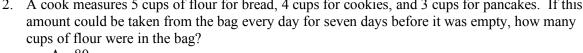> ➢ Interest is to be calculated on 365 days.

DOLLAR AMOUNTS

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

> > ***Example:*** $35.9765 to $35.98

1. If an automated welding machine can produce 35 welds in one hour, how many welds can be produced in a 24-hour period?
   A. 830
   B. 840
   C. 850
   D. 860

2. A cook measures 5 cups of flour for bread, 4 cups for cookies, and 3 cups for pancakes. If this amount could be taken from the bag every day for seven days before it was empty, how many cups of flour were in the bag?
   A. 80
   B. 82
   C. 84
   D. 86

3. AKB Electronics is looking into renting additional warehouse space. The floor space AKB is considering needs to measure 125 feet by 84 feet. What is the square foot requirement for the additional warehouse?
   A. 10,100
   B. 10,500
   C. 12,400
   D. 14,500

4. Smith Grocery had new flooring laid in its bakery area. The space measures 24 feet by 18 feet. Ceramic tiles for the area cost $3.15 per square foot. Two tile layers worked 7.5 hours each to lay the tile and the tile layers were paid time-and-a-half for their work. Their normal rate is $22.25 per hour. What was the total cost of the new flooring (to the nearest dollar)?
   A. $1,611
   B. $1,695
   C. $1,861
   D. $2,542

5. A worker provides child care in her home. She charges $5 per hour per child. On one day she cared for Amy for 3 hours, Joshua for 4 hours, Jasmine for 4 hours, and Kaylee for 6 hours. What was her total pay for that day?
   A. $45
   B. $65
   C. $85
   D. $95

6. The monthly electricity usage for Thomas Photo Studio is 2,135 kilowatts, and the fuel adjustment charge is $0.0155 per kilowatt hour. The energy charge for the first 1,000 kilowatt hours is $0.077 per kWh. The cost for remaining kilowatt hours is $0.059 per kWh. What is the total cost of electricity?
   A. $143.97
   B. $159.06
   C. $177.06
   D. $197.48

7. James rents out commercial real estate. He earns 2 percent commission on the first $25,000 in rentals, 4 percent on the next $25,000, and 8 percent on rentals over $50,000. Last month he was responsible for $118,000 worth of rentals. What was his total commission?
   A. $5,860
   B. $6,700
   C. $6,860
   D. $6,940

8. C&C Dental Services occupies 30,000 square feet in the Medical Arts Building with 100,000 square feet. Annual cost of security is $30,000. The Medical Arts Building apportions the cost based on square feet occupied. What does C&C Dental Services pay?
   A. $1,200
   B. $5,782
   C. $9,000
   D. $9,900

9. The bakery purchased a new oven at a cost of $1,200. The estimated life of the oven is 10 years and the salvage value is $300. What is the book value for the oven at the end of the first year?
   A. $850
   B. $900
   C. $1,000
   D. $1,110

10. Assets are $13,000 cash and $78,000 merchandise. Owner's equity is $35,000. Find the amount of liabilities.
    A. $34,000
    B. $50,000
    C. $56,000
    D. $65,000

11. Sales returns at the camera shop were $349.55 and net sales were $13,982.00. What are the sales returns as a percent of net sales?
    A. 2.5 percent
    B. 8.2 percent
    C. 1.5 percent
    D. 2.2 percent

12. Sam Ram wants to buy software to help him with his income tax. The software regularly sells for $54.00. The sale price is $37.99. What is the markdown?
    A. $16.01
    B. $16.99
    C. 15.99
    D. None of the above

13. Daniel Ross presses shirts at All Day Cleaners. He gets paid $0.37 per shirt. Last week he pressed 649 shirts. What was his total pay?
    A. $240.00
    B. $240.13
    C. $295.25
    D. $220.25

14. Jackie Conley's job as a social worker pays $43,500 a year. What is her monthly salary?
    A. $3,625.00
    B. $3,265.00
    C. $3,525.00
    D. $4,625.00

15. Kaitlyn Halton's gross pay is $26,300.00. She takes a married exemption of $4,000.00. Her state income tax rate is 5.5 percent. How much will she pay in state tax?
    A. $1,226.50
    B. $1,115.00
    C. $1,281.50
    D. $1,821.25

16. Alexander Smith's gross weekly pay is $576. His earnings to date for the year total $12,824. What amount is deducted from his pay per week for Medicare, which is taxed at 1.45 percent?
    A. $6.00
    B. $19.95
    C. $8.35
    D. $15.60

17. Lena Dunham is employed at Taste of Thai. He has family medical coverage through the group medical plan that Taste of Thai provides for its employees. The annual cost of Lena's family membership is $3,700. The company pays 35 percent of the cost. How much does Lena pay annually for medical insurance?
    A. $2,100
    B. $3,670
    C. $5,400
    D. $2,405

18. Norah Jeffreys is a professional singer. She tracks her transportation expenses to and from her performances. Her expense sheet looks like this:

Gas/Oil	$30.00
Parking	5.00
Tolls	7.00
Commuting	45.50

Jeffreys budgets $100.00 per month for transportation. How much more or less are her expenses than the $100.00 budgeted?
    A. $13.50 less
    B. $12.50 less
    C. $19.50 less
    D. $12.50 more

19. The McKinney family's monthly budget allowed them to spend $175.00 for personal expenses. To prepare for an upcoming camping trip in June, their personal spending totaled $455.00. By how much did they exceed their budget that month?
    A. $235.00
    B. $195.00
    C. $260.00
    D. None of the above

20. Suzie McDougal wishes to deposit checks for $13.75, $92.08, and $8.21 into her account. She would like to receive $15.00 back in cash. What is her total deposit?
    A. $114.04
    B. $99.04
    C. $115.94
    D. $99.54

21. Seven hundred sixty-six and 70/100 dollars as a numeral is:
    A. $676.50
    B. $765.70
    C. $766.70
    D. $666.70

22. Betty Yoon has a principal of $900.00 in her savings account. It earns 6 % APR interest compounded quarterly. What is the amount in the account at the end of the third quarter?
    A. $945.22
    B. $941.11
    C. $935.67
    D. $987.33

23. Tracy's Boutique sells a line of dresses at a regular price of $40.00. The store marks down the dresses 25 percent. What is the sale price of one of these dresses?
    A. $32.00
    B. $42.00
    C. $10.00
    D. $30.00

24. Jolene Downey purchased a hot tub for $5,000. She made a 50 percent down payment and financed the remainder. What amount did she finance?
    A. $3,000.00
    B. $2,400.00
    C. $2,500.00
    D. $2,000.00

25. Cindy Hayden worked at Keller Medical Institute for 9 ½ hours on Monday and from 6:15 am until 12:45 pm on Tuesday. What are her total hours?
    A. 16 hours
    B. 25 hours
    C. 19 hours
    D. 17 hours

26. Phyllis Klein is a computer analyst. Her annual salary is $52,789. What is her monthly salary?
    A. $3,444.22
    B. $4,399.08
    C. $4,100.00
    D. $4,700.87

27. The decimal equivalent of twenty-six and three-eighths percent is:
    A. 26.38
    B. 0.26375
    C. 0.26038
    D. None of the above

28. Betty Rayburn is a manufacturer's representative for a plastics company. She travels all over the country selling her company's products. Her total monthly expenses for August, September, and October were $2,756.11, $7,111.20, and $5,080.70. What was her average monthly expenditure?
    A. $4,567.76
    B. $3,898.01
    C. $4,982.67
    D. $3.983.45

29. Shawn Speight purchased two light fixtures from Central Lighting for $31.83 each. What was the amount of his check, expressed in words?
    A. Sixty-four and 66/100 dollars
    B. Seventy-three and 66/100 dollars
    C. Seventy-six and 66/100 dollars
    D. Sixty-three and 66/100 dollars

30. David Meyers purchased a lawnmower for $328.61, a lawn sprinkler for $13.27, and a hose reel for $27.96. He must pay the state tax of 5.5 percent, the county tax of 1.5 percent, and the city tax of 2 percent. What is the total purchase price?
    A. $33.29
    B. $369.84
    C. $403.13
    D. $37.24

31. Seth Colburn wants to buy the best deal in cereal he can find. He finds rice puffs for $2.49 for 24 ounces, $2.69 for 36 ounces, $2.29 for 12 ounces, and $4.00 for 48 ounces. What is the unit price of the best buy?
    A. 19.08 cents per ounce
    B. 8.33 cents per ounce
    C. 10.38 cents per ounce
    D. 7.47 cents per ounce

32. At Claremore's Pizza the regular price for 2 large, one-topping pizzas is $12.98 each. Claremore's offers a markdown rate of 32 percent on Tuesdays. What is the sale price for 2 large, one-topping pizzas?
    A. $17.45
    B. $18.99
    C. $17.65
    D. $13.89

33. Samuel Peterson's bank granted him a single-payment loan of $3,250 to pay a repair bill. He agreed to repay the loan in 31 days at an exact interest rate of 11.75 percent. What is the maturity value of the loan?
    A. $3,282.43
    B. $3,554.66
    C. $3,300.90
    D. $3,211.09

34. What is 33/62 written as a decimal rounded to the nearest hundredth?
    A. 0.57
    B. 0.53
    C. 0.59
    D. 0.54

35. Round the answer to 3 places. 19.76 divided by 0.227 =
    A. 87.044
    B. 87.048
    C. 78.084
    D. 87.047

36. Convert the following percent 15.4321% to decimals.
    A. 0.0154321
    B. 0.154321
    C. 0.00154321
    D. 1.54321

37. Eugene Cantu works as a lifeguard earning $8.50 an hour for 20 hours a week. What is Eugene's gross pay for each week?
    A. $170.00
    B. $160.00
    C. $1,600.00
    D. $1,700.00

38. At Shady Acres Grocery employees earn an hourly rate of $7.50. They earn double that for any hours they work in addition to their usual 40-hour week. The hours that Paul Strong worked in one week are shown below. What was Strong's total pay for the week?

Day	Hours
Monday	8 ½
Tuesday	7 ½
Wednesday	8 ½
Thursday	9
Friday	9 ½

    A. $300.00
    B. $45.00
    C. $600.00
    D. $345.00

39. Hayden Evans sells motorcycles. He earns a 10 percent commission on the first $5,000 and 15 percent on all sales over $5,000. How much commission will he earn on $19,000 in sales?
    A. $1,900
    B. $2,600
    C. $2,400
    D. $2,850

40. Your electric bills for the last 6 months are July = $72.62, August = $56.52, September = $65.23, October = $74.72, November = $80.35, and December = $96.25. What is the average of these electric bills?
    A. $74.61
    B. $69.89
    C. $74.28
    D. $77.86

41. The manager of Sugar's Pizzeria deposited money in the restaurant's checking account at the end of the day. The deposit included 4 fifty-dollar bills, 9 twenty-dollar bills, 16 ten-dollar bills, 22 five –dollar bills, 16 one dollar bills, 29 quarters, 14 dimes, 9 nickels, and 17 pennies. What was the total deposit?
    A. $675.27
    B. $675.10
    C. $678.27
    D. $698.27

42. Natalie Love bought a new bicycle for $248. The sales tax rate is 6 percent. What is the total purchase price?
    A. $368.22
    B. $234.66
    C. $262.88
    D. $12.40

43. Ryan Mabry's charge account statement showed a previous balance of $7,112.55, a finance charge of $17.82, new purchases of $86.50 and $111.88, and a payment of $7,080.00. What is his new balance?
    A. $12.13
    B. $0.00
    C. $248.75
    D. $110.01

44. Adolfo Ramirez purchased a microwave and dishwasher for $897. He made an 18 percent down payment and financed the remainder. What amount did he finance?
    A. $791.01
    B. $786.12
    C. $735.54
    D. $766.34

45. Betty earned $410 weekly and received a 3.4% pay increase. Her new weekly salary is:
    A. $13.94
    B. $549.40
    C. $139.40
    D. $423.94

46. Suzanne is a cook. Her recipe calls for 1/2 teaspoon of nutmeg and 2 1/2 teaspoons of cinnamon. She needs to quadruple the recipe. How much cinnamon will she need?
    A. 15 teaspoons
    B. 7 1/2 teaspoons
    C. 10 teaspoons
    D. 12 1/2 teaspoons

47. Jacque is purchasing 4 new CD's at $14.99 each. Sales tax is 8.25%. How much does she owe the clerk?
    A. $59.96
    B. $64.91
    C. $16.23
    D. $123.68

48. You and a friend plan to drive straight through 1,150 miles. If you leave on Friday at 9:00 am and with breaks you average 55 mph, about what time should you reach your destination assuming no time changes?
    A. Saturday, 5:00 a.m.
    B. Saturday, 12 noon
    C. Saturday, 10:00 a.m.
    D. Saturday, 6:00 a.m.

49. What is twenty-one and one hundred ninety over two hundred thirty written as a fraction reduced to its lowest terms?
    A. 21 3/4
    B. 21 190/230
    C. 21 19/23
    D. 21 5/6

50. A baseball player gets a hit six out of every seventeen at bats. His batting average is:
    A. 353
    B. 35.3
    C. 3.53
    D. 0.353