

**EXAM INFORMATION**

This exam was developed to enable schools to award credit to students for knowledge equivalent to that learned by students taking the course. This exam covers topics such as number sense, algebraic concepts, statistics, and business applications.

The exam contains 100 questions to be answered in 2 hours. The use of a non-programmable calculator is permitted in this exam. The following four titles will be provided as a reference within the exam: The Future Value of One Dollar, The Present Value of One Dollar, The Future Value of an Annuity of One Dollar for N Years, & The Present Value of an Annuity of One Dollar. The table will appear as the first few items within the exam. It is advised that test takers “mark for review” these items so they can refer to the table throughout the exam.

**Form Codes:** SS812, ST812, SY812, SZ812

**CREDIT RECOMMENDATIONS**

The American Council on Education’s College Credit Recommendation Service (ACE CREDIT) has evaluated the DSST test development process and content of this exam. It has made the following recommendations:

**Area or Course Equivalent:** Business Mathematics

**Level:** Lower-level baccalaureate

**Amount of Credit:** 3 Semester Hours

**Minimum Score:** 400

**Source:** [www.acenet.edu](http://www.acenet.edu)

**EXAM CONTENT OUTLINE**

The following is an outline of the content areas covered in the examination. The approximate percentage of the examination devoted to each content area is also noted.

- I. **Number Sense – 5%**
  - a. Percentages, Fractions, and Decimals
- II. **Algebraic Concepts – 16%**
  - a. Linear equations and inequalities
  - b. Simultaneous linear equations
  - c. Quadratic equations and functions
  - d. Graphing equations and evaluating functions
- III. **Statistics – 14%**
  - a. Central tendency
  - b. Expected value
  - c. Weighted averages
  - d. Dispersion
  - e. Probability distributions
- IV. **Business Applications – 49%**
  - a. Index numbers

- b. Interest
- c. Depreciation / salvage value
- d. Discounts and credit terms
- e. Installment purchases, promissory notes and other loans
- f. Markup/markdown
- g. Taxes (e.g., Payroll, income, sales tax, property tax)
- h. Cost calculations (e.g., gross and net pay; fixed and variable costs, cost minimization/value optimization)
- i. Breakeven analysis (algebraically and graphically)
- j. Financial ratio calculation and analysis
- k. Interpretation of graphical representations (and misuse of data)
- l. Extrapolation and Interpolation
- m. Currency Conversions
- n. Investment performance measures (e.g., p/e ratios, yield factors, rates of return)
- o. Inventory valuation

**V. Financial Mathematics – 16%**

- a. Annuities and present value
- b. Amortization and future value
- c. Annual percentage rate
- d. Effective annual rate

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## REFERENCES

Below is a list of reference publications that were either used as a reference to create the exam, or were used as textbooks in college courses of the same or similar title at the time the test was developed. You may reference either the current edition of these titles or textbooks currently used at a local college or university for the same class title. It is recommended that you reference more than one textbook on the topics outlined in this fact sheet.

You should begin by checking textbook content against the content outline provided before selecting textbooks that cover the test content from which to study.

Sources for study material are suggested but not limited to the following:

1. Mullins, Bernadette; Lial, Margaret; Hungerford, Thomas; Holcomb, John. *Finite Mathematics with Applications in the Management, Natural and Social Sciences*, 12<sup>th</sup> Edition. Pearson
2. Wittry, Sharon; Slater, Jeffery. *Practical Business Math Procedures*, 13<sup>th</sup> Edition. McGraw-Hill Higher Education.

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## SAMPLE QUESTIONS

All test questions are in a multiple-choice format, with one correct answer and three incorrect options. The following are samples of the types of questions that may appear on the exam.

1. If graphed over the last 100 years, which of the following graphs would show a curve that is decreasing?
  - a. Percentage of adult Americans who smoke
  - b. Population of the United States
  - c. Amount of U.S. national debt
  - d. Number of Americans who drive cars

2. During one month, Jane works 42 hours during the first week and 40 hours during the second week. Her regular pay is \$7.50 per hour for 35 hours per week, and she is paid time and one half for each hour worked in excess of 35 hours. Her FICA deduction is 6.25 percent and her federal income tax is deducted at a rate of 25 percent. If she pays no other taxes, what is her net pay for the first two weeks of the month?
  - a. \$422.81
  - b. \$453.75
  - c. \$461.25
  - d. \$576.56
  
3. In Year 1, a company used 120,000 gallons of fuel oil at a cost of \$0.75 per gallon. In Year 2, the company used 150,000 gallons at a cost of \$0.80 per gallon. By what percentage did the company's total fuel cost increase Year 2 over Year 1?
  - a. -25.0%
  - b. 6.7%
  - c. 25.0%
  - d. 33.3%
  
4. Given five numbers, which of the statements below is always true?
  - a. The arithmetic mean cannot be smaller than the largest one of the numbers.
  - b. The arithmetic mean cannot be smaller than the smallest two of the numbers.
  - c. The arithmetic mean cannot be smaller than the median.
  - d. The arithmetic mean cannot be smaller than three of the numbers.
  
5. A jewelry store wants to sell five diamonds for \$1,200 per carat. If the weights of the diamonds are  $\frac{1}{4}$ ,  $\frac{5}{6}$ ,  $\frac{3}{7}$ , and  $\frac{1}{2}$  carats, what is their total value?
  - a. \$2,400
  - b. \$2,750
  - c. \$2,800
  - d. \$2,814
  
6. What is the current yield of a 3 percent bond with a face (par) value of \$1,000 if it is quoted at a deep discount price of  $6\frac{1}{2}$  percent?
  - a. 3.5%
  - b. 9.5%
  - c. 19.5%
  - d. 46.2%
  
7. A company has five employees and reports its salary averages as a median. If the salary range is \$29,000 and the average salary is \$20,000, which of the following salary listings could represent the company?
  - a. \$12,000; \$14,000; \$20,000; \$25,000; \$29,000
  - b. \$15,000; \$19,000; \$20,000; \$23,000; \$29,000
  - c. \$18,000; \$19,000; \$20,000; \$29,000; \$47,000
  - d. \$20,000; \$20,000; \$20,000; \$23,000; \$29,000

Answers to sample questions:  
 1-A; 2-B; 3-D; 4-B; 5-D; 6-D; 7-C