Chapter 17

Technology and Other Operational Risks

**True / False Questions**

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| 1. | Two important input factors in financial intermediation are capital and labor.    True    False |

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| 2. | Technological efficiency focuses exclusively on the cost side of financial intermediation.    True    False |

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| 3. | According to Hitachi Data Systems, recovery time from system failures averages 12 hours.    True    False |

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| 4. | The Bank for International Settlements has stated that banks should carry extra capital as a cushion against operational risks.    True    False |

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| 5. | As of the first quarter 2012, non-interest expense was approximately 640 percent larger than interest expense for all FDIC insured banks.    True    False |

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| 6. | The "flash crash" on the NYSE in May 2010 was directly attributable to the manipulation of LIBOR by Barclays PLC.    True    False |

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| 7. | Noninterest expense has increased faster than interest expense for all U.S. insured commercial banks in recent years.    True    False |

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| 8. | The U.S. Treasury has recently proposed that banks carry a capital cushion against losses resulting from operational risk.    True    False |

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| 9. | Bernie Madoff and his infamous Ponzi scheme is an example of external operational risk to the hedge funds he managed.    True    False |

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| 10. | In recent years, U.S. banks have alone spent $20 billion per year in technology related expenditures.    True    False |

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| 11. | The initial steps of cross selling financial products can easily occur with computer technology.    True    False |

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| 12. | Investing in appropriate technology allows an FI to access lower-cost funding markets.    True    False |

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| 13. | Investment in technology has allowed FIs to lower the amount of non-interest income as a percent of total operating income.    True    False |

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| 14. | Wholesale cash management services allow corporate customers to minimize cash balances and to monitor quickly cash transactions and balances.    True    False |

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| 15. | Controlled disbursement accounts are designed to reduce the delay in check clearing.    True    False |

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| 16. | Appropriate technology may allow an FI to achieve lower-cost funding.    True    False |

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| 17. | Cash management services include the collection, disbursement, and transfer of funds.    True    False |

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| 18. | Account reconciliation redirects funds from accounts in a large number of different banks to a few centralized accounts at one bank.    True    False |

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| 19. | Retail banking services and products in recent years have moved strongly toward electronic payment technology.    True    False |

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| 20. | Although secure communications can be carried out between an FI and their customers in dedicated message centers, the centers have yet to replace e-mail communications as the primary means of customer contact.    True    False |

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| 21. | Although cloud computing is a technology that FIs can provide to business clients, the FI itself seldom uses cloud computing in their own operations.    True    False |

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| 22. | New retail products and services based heavily on technology often are risky because of the high usage rate necessary to make them positive net present value projects.    True    False |

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| 23. | The success in technologically related innovation often is dependent on changes in regulations and regulatory procedures.    True    False |

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| 24. | Cross-market selling of financial products requires production of the products within the same branch or bank office.    True    False |

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| 25. | Increases in the rate of innovation of new financial products, whether successful or not, is often credited to advances in technology.    True    False |

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| 26. | The increased use of technology may have positive and negative effects on the perceived service quality provided to retail customers.    True    False |

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| 27. | According to economic theory involving economies of scale, larger and more cost-efficient FIs should prevail over smaller, less cost-efficient FIs.    True    False |

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| 28. | If ACX + Y < ACX + ACY, where AC is average production cost and X and Y are products, economies of scope are present.    True    False |

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| 29. | An increase in the cost of the joint production of services as compared to the production of those services independently is an example of diseconomies of scale.    True    False |

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| 30. | Recent evidence suggests that economies of scale may exist for banks up to the $10 billion to $25 billion range.    True    False |

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| 31. | Recent evidence strongly suggests that economies of scope exist for both asset and liability products, but not for off-balance-sheet products.    True    False |

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| 32. | Banks in given size classes tend to have very little difference in cost structures.    True    False |

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| 33. | In the U.S., electronic methods of payment account for a larger number of transactions, but a lower aggregate dollar value than non-electronic methods of payment.    True    False |

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| 34. | Compared to the United States, the use of electronic methods of payment is lower in other major developed countries.    True    False |

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| 35. | As of January 2012, credit cards used in either a credit or debit function accounted for over 60 percent of the number of payments made in the U.S.    True    False |

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| 36. | As of January 2012, credit cards used in either a credit or debit function accounted for less than 5 percent of the dollar value of payments made in the U.S.    True    False |

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| 37. | Fedwire is a wire transfer network operated through the Federal Reserve System to assist banks in making financial transactions among themselves, on behalf of themselves and customers.    True    False |

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| 38. | Fedwire is a wire transfer network of over 9,300 international FIs with the Federal Reserve System.    True    False |

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| 39. | As of 2012, the combined value of payments sent over Fedwire and CHIPS often exceeded $5.0 trillion a day.    True    False |

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| 40. | Funds transferred on CHIPS are settled at the end of the day.    True    False |

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| 41. | Funds transferred on the Fedwire are settled immediately.    True    False |

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| 42. | Daylight overdraft risk occurs because banks often provide immediate credit to customers for deposits, even though the funds may not arrive until later in the day.    True    False |

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| 43. | CHIPS guarantees that any wire transfer is final at the time it is made.    True    False |

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| 44. | The Fed now charges 20 basis points annually for daylight overdrafts.    True    False |

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| 45. | Regulation F, a part of the FDIC Improvement Act of 1991, requires financial institutions to develop internal procedures to limit settlement exposures to correspondent banks.    True    False |

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| 46. | The increased use of wire transfers as a replacement for check and cash payments has decreased the risk of fraud.    True    False |

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| 47. | Delaware and South Dakota have become leading states in the distribution of some financial services because of liberal regulations.    True    False |

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| 48. | Usury ceilings place caps on interest rates that FIs can charge on certain types of loans and are established by federal regulatory authorities.    True    False |

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| 49. | The U.S. tax burden faced by domestic FIs has been minimized, in part, by the ability to use international wire networks for the transfer of funds.    True    False |

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| 50. | The operational risk faced by an FI includes sources other than technology.    True    False |

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| 51. | Regulators have proposed that operational risk should be measured for the purpose of meeting overall capital adequacy.    True    False |

**Multiple Choice Questions**

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| 52. | How can noninterest operating income of an FI be increased by improved technological efficiency?      |  |  | | --- | --- | | A. | By improving the efficiency of management of information flows. |  |  |  | | --- | --- | | B. | By obtaining access to low cost sources of funds. |  |  |  | | --- | --- | | C. | By linking services to the quality of the FI's technology. |  |  |  | | --- | --- | | D. | By innovating new interest earning products. |  |  |  | | --- | --- | | E. | By complying with all government regulations. | |

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| 53. | How can noninterest operating expenses of an FI be reduced by improved technological efficiency?      |  |  | | --- | --- | | A. | By improving the efficiency of management of information flows. |  |  |  | | --- | --- | | B. | By obtaining access to low cost sources of funds. |  |  |  | | --- | --- | | C. | By linking services to the quality of the FI's technology. |  |  |  | | --- | --- | | D. | By innovating new interest earning products. |  |  |  | | --- | --- | | E. | By complying with all government regulations. | |

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| 54. | How can interest expense of an FI be reduced by improved technological efficiency?      |  |  | | --- | --- | | A. | By improving the efficiency of management of information flows. |  |  |  | | --- | --- | | B. | By obtaining access to low cost sources of funds. |  |  |  | | --- | --- | | C. | By linking services to the quality of the FI's technology. |  |  |  | | --- | --- | | D. | By innovating new interest earning products. |  |  |  | | --- | --- | | E. | By complying with all government regulations. | |

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| 55. | How can interest income of an FI be increased by improved technological efficiency?      |  |  | | --- | --- | | A. | By improving the efficiency of management of information flows. |  |  |  | | --- | --- | | B. | By obtaining access to low cost sources of funds. |  |  |  | | --- | --- | | C. | By linking services to the quality of the FI's technology. |  |  |  | | --- | --- | | D. | By innovating new interest earning products. |  |  |  | | --- | --- | | E. | By complying with all government regulations. | |

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| 56. | Which of the following is NOT a source of operational risk for an FI?      |  |  | | --- | --- | | A. | Capital assets. |  |  |  | | --- | --- | | B. | Customer relationships. |  |  |  | | --- | --- | | C. | Technology. |  |  |  | | --- | --- | | D. | Employees. |  |  |  | | --- | --- | | E. | Positive duration gap. | |

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| 57. | Which of the following are potential benefits of technology for an FI?      |  |  | | --- | --- | | A. | Improved service quality, especially for customers of large banks. |  |  |  | | --- | --- | | B. | The rate of innovation of new products can be increased. |  |  |  | | --- | --- | | C. | FIs can more easily cross-market new and existing products to customers. |  |  |  | | --- | --- | | D. | Improved flexibility in financial transactions for retail customers. |  |  |  | | --- | --- | | E. | All of the above. | |

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| 58. | Which of the following occur when managers undertake growth-oriented investments to increase an FI's size that may be inconsistent with stockholders' value-maximizing objectives?      |  |  | | --- | --- | | A. | Technology risk. |  |  |  | | --- | --- | | B. | Operational efficiency. |  |  |  | | --- | --- | | C. | Agency conflicts. |  |  |  | | --- | --- | | D. | Diseconomies of scale. |  |  |  | | --- | --- | | E. | Diseconomies of scope. | |

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| 59. | The expenses relating to increased technological improvements made by FIs during the last several years has the most impact on which of the following?      |  |  | | --- | --- | | A. | Interest expense. |  |  |  | | --- | --- | | B. | Noninterest expense. |  |  |  | | --- | --- | | C. | Net income. |  |  |  | | --- | --- | | D. | Provision for loan losses. |  |  |  | | --- | --- | | E. | Net securities gains or losses | |

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| 60. | As banks have increased the use of technology over the past 20 years,      |  |  | | --- | --- | | A. | noninterest income as a percent of total operating income has approximately doubled. |  |  |  | | --- | --- | | B. | there has been a decrease in the importance of both Fedwire and CHIPS. |  |  |  | | --- | --- | | C. | there has been an increase in negative net present value because of the speed in which rivals can replicate innovations. |  |  |  | | --- | --- | | D. | banks no longer need to consolidate because they can access customers worldwide through internet services. |  |  |  | | --- | --- | | E. | noninterest expense as a percent of total operating income has decreased as supporting branch banking has decreased in importance. | |

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| 61. | What is float?      |  |  | | --- | --- | | A. | Overnight payments via CHIPS or Fedwire. |  |  |  | | --- | --- | | B. | Encoding, endorsing, microfilming, and handling customers' checks. |  |  |  | | --- | --- | | C. | Time it takes a check to clear at a bank. |  |  |  | | --- | --- | | D. | Management of multiple currency and security portfolios for trading and investment purposes. |  |  |  | | --- | --- | | E. | Interval between the dispatch of a bill and actual payment by the consumer. | |

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| 62. | Which of the following is a centralized collection service for corporate payments that helps reduce the float?      |  |  | | --- | --- | | A. | Funds concentration. |  |  |  | | --- | --- | | B. | Electronic billing. |  |  |  | | --- | --- | | C. | Treasury management. |  |  |  | | --- | --- | | D. | Controlled disbursement accounts. |  |  |  | | --- | --- | | E. | Wholesale lockbox. | |

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| 63. | Which of the following wholesale services offered by FIs allows businesses to transfer and transact invoices, purchase orders, and shipping notices automatically?      |  |  | | --- | --- | | A. | Electronic data exchange. |  |  |  | | --- | --- | | B. | E-commerce facilitation. |  |  |  | | --- | --- | | C. | Electronic billing. |  |  |  | | --- | --- | | D. | Electronic funds transfer. |  |  |  | | --- | --- | | E. | Account reconciliation. | |

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| 64. | Which of the following wholesale services offered by FIs to businesses allows the FI to combine the e-mail capabilities of the internet with the FIs ability to process payments electronically through the interbank payment networks?      |  |  | | --- | --- | | A. | Electronic data exchange. |  |  |  | | --- | --- | | B. | E-commerce facilitation. |  |  |  | | --- | --- | | C. | Electronic billing. |  |  |  | | --- | --- | | D. | Electronic funds transfer. |  |  |  | | --- | --- | | E. | Account reconciliation. | |

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| 65. | Which of the following partially explains why cash management services have not attracted customers in Europe to the degree that they have in the US?      |  |  | | --- | --- | | A. | Prevalence of nationwide branching and banking in Europe. |  |  |  | | --- | --- | | B. | Prevalence of interregional banking restrictions in Europe. |  |  |  | | --- | --- | | C. | Prohibitive charges imposed for the use of domestic telephone lines in Europe. |  |  |  | | --- | --- | | D. | Prohibitive charges imposed on such services in Europe. |  |  |  | | --- | --- | | E. | None of the above. | |

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| 66. | As banks and other FIs increase the use of technology, an unintended consequence may be that      |  |  | | --- | --- | | A. | cost savings are seldom realized. |  |  |  | | --- | --- | | B. | customers are driven away because they still want to interact with a person for certain transactions. |  |  |  | | --- | --- | | C. | innovation of new products tends to take longer periods of time to attract new customers. |  |  |  | | --- | --- | | D. | the marginal cost of adding new customers tends to increase at an increasing rate. |  |  |  | | --- | --- | | E. | None of the above. | |

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| 67. | Which of the following implies reduced unit costs as size or volume of assets increases?      |  |  | | --- | --- | | A. | Diseconomies of scale. |  |  |  | | --- | --- | | B. | Economies of scale. |  |  |  | | --- | --- | | C. | Economies of scope. |  |  |  | | --- | --- | | D. | Diseconomies of scope. |  |  |  | | --- | --- | | E. | Constant returns to scale | |

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| 68. | Which of the following implies reduced unit costs as the range of products offered increases inputs in producing multiple products?      |  |  | | --- | --- | | A. | Diseconomies of scale. |  |  |  | | --- | --- | | B. | Economies of scale. |  |  |  | | --- | --- | | C. | Economies of scope. |  |  |  | | --- | --- | | D. | Diseconomies of scope. |  |  |  | | --- | --- | | E. | Constant returns to scale. | |

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| 69. | Large-scale investment projects that lead to excess capacity and integration problems that create cost overruns and control problems are examples of      |  |  | | --- | --- | | A. | diseconomies of scale. |  |  |  | | --- | --- | | B. | economies of scale. |  |  |  | | --- | --- | | C. | economies of scope. |  |  |  | | --- | --- | | D. | diseconomies of scope. |  |  |  | | --- | --- | | E. | constant returns to scale. | |

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| 70. | Which of the following implies that small FIs are more cost efficient than large FIs, and that in a freely competitive environment for financial services, small FIs may outperform their larger counterparts?      |  |  | | --- | --- | | A. | Economies of scale. |  |  |  | | --- | --- | | B. | Diseconomies of scale. |  |  |  | | --- | --- | | C. | Economies of scope. |  |  |  | | --- | --- | | D. | Diseconomies of scope. |  |  |  | | --- | --- | | E. | Constant returns to scale. | |

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| 71. | Which of the following occurs if the costs of joint production of FI services are higher than they would be if they were produced independently?      |  |  | | --- | --- | | A. | Economies of scale. |  |  |  | | --- | --- | | B. | Diseconomies of scale. |  |  |  | | --- | --- | | C. | Economies of scope. |  |  |  | | --- | --- | | D. | Diseconomies of scope. |  |  |  | | --- | --- | | E. | Constant returns to scale. | |

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| 72. | According to studies, which of the following may better explain cost differences and operating cost efficiencies among FIs?      |  |  | | --- | --- | | A. | Diseconomies of scale. |  |  |  | | --- | --- | | B. | Economies of scale. |  |  |  | | --- | --- | | C. | Economies of scope. |  |  |  | | --- | --- | | D. | X-inefficiencies. |  |  |  | | --- | --- | | E. | Diseconomies of scope. | |

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| 73. | Which of the following best describes economies of scope?      |  |  | | --- | --- | | A. | They occur when the average cost of production decreases as the level of output increases. |  |  |  | | --- | --- | | B. | They are effects on costs related to managerial ability and other hard-to-quantify factors. |  |  |  | | --- | --- | | C. | They occur when cost savings are realized from using many of the same inputs to produce multiple products. |  |  |  | | --- | --- | | D. | They occur when the average cost of production increases as the level of output increases. |  |  |  | | --- | --- | | E. | They occur when cost increases are realized from using many of the same inputs to produce multiple products. | |

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| 74. | Which of the following best describes/defines X-inefficiencies?      |  |  | | --- | --- | | A. | The average cost of production decreases as the level of output increases. |  |  |  | | --- | --- | | B. | The effects on costs related to managerial ability and other hard-to-quantify factors. |  |  |  | | --- | --- | | C. | Cost savings are realized from using many of the same inputs to produce multiple products. |  |  |  | | --- | --- | | D. | The average cost of production increases as the level of output increases. |  |  |  | | --- | --- | | E. | Cost increases are realized from using many of the same inputs to produce multiple products. | |

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| 75. | Which of the following best describes economies of scale?      |  |  | | --- | --- | | A. | The average cost of production decreases as the level of output increases. |  |  |  | | --- | --- | | B. | The effects on costs related to managerial ability and other hard-to-quantify factors. |  |  |  | | --- | --- | | C. | Cost savings are realized from using many of the same inputs to produce multiple products. |  |  |  | | --- | --- | | D. | The average cost of production increases as the level of output increases. |  |  |  | | --- | --- | | E. | Cost increases are realized from using many of the same inputs to produce multiple products. | |

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| 76. | Which of the following are the two basic approaches to analyzing the cost functions of FIs?      |  |  | | --- | --- | | A. | Basic indicator approach and standardized approach. |  |  |  | | --- | --- | | B. | Standardized approach and advanced measurement approach. |  |  |  | | --- | --- | | C. | Production approach and intermediation approach. |  |  |  | | --- | --- | | D. | Basic indicator approach and advanced measurement approach. |  |  |  | | --- | --- | | E. | Intermediation approach and advanced measurement approach. | |

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| 77. | Which of the following observations concerning the production approach to measure the cost function of FIs is true?      |  |  | | --- | --- | | A. | It views FIs' outputs of services as having three underlying inputs. |  |  |  | | --- | --- | | B. | Labor and capital are the only inputs. |  |  |  | | --- | --- | | C. | It views the output as being produced by labor, capital and the funds used to produce intermediated services. |  |  |  | | --- | --- | | D. | Deposit costs are viewed as an input in the banking and thrift industries. |  |  |  | | --- | --- | | E. | None of the above. | |

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| 78. | Which of the following observations concerning the intermediation approach to measure the cost function of FIs is true?      |  |  | | --- | --- | | A. | It views FIs' outputs of services as having two underlying inputs. |  |  |  | | --- | --- | | B. | Labor and capital are the only inputs. |  |  |  | | --- | --- | | C. | It views the output as being produced by labor, capital and the funds used to produce intermediated services. |  |  |  | | --- | --- | | D. | Premiums or reserves are viewed as an input in the banking and thrift industries. |  |  |  | | --- | --- | | E. | None of the above. | |

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| 79. | Which of the following statements is NOT true?      |  |  | | --- | --- | | A. | The Federal Reserve operates the Fedwire electronic payments system while CHIPS is a private network. |  |  |  | | --- | --- | | B. | Fedwire is used to transfer funds from the Fed to the banking system while CHIPS is used to make interbank funds transfers. |  |  |  | | --- | --- | | C. | The Fed guarantees all payments on Fedwire while CHIPS transfers are provisional until settlement. |  |  |  | | --- | --- | | D. | Large daylight overdrafts are incurred on both Fedwire and CHIPS. |  |  |  | | --- | --- | | E. | Fedwire has a fee for daylight overdrafts but CHIPS does not. | |

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| 80. | As of January 2012, which of the following represented the highest percent of the dollar value of noncash transactions in the United States?      |  |  | | --- | --- | | A. | Checks. |  |  |  | | --- | --- | | B. | Card payments. |  |  |  | | --- | --- | | C. | Debit transfers. |  |  |  | | --- | --- | | D. | E-money payments. |  |  |  | | --- | --- | | E. | Credit transfers. | |

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| 81. | As of January 2012, which of the following accounts for the highest volume of noncash transactions in the United States?      |  |  | | --- | --- | | A. | Checks. |  |  |  | | --- | --- | | B. | Card payments. |  |  |  | | --- | --- | | C. | Debit transfers. |  |  |  | | --- | --- | | D. | E-money payments. |  |  |  | | --- | --- | | E. | Credit transfers. | |

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| 82. | As of January 2012, which of the following represented the highest percent of the dollar value of noncash transactions worldwide?      |  |  | | --- | --- | | A. | Checks. |  |  |  | | --- | --- | | B. | Card payments. |  |  |  | | --- | --- | | C. | Debit transfers. |  |  |  | | --- | --- | | D. | E-money payments. |  |  |  | | --- | --- | | E. | Credit transfers. | |

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| 83. | As of January 2012, which of the following accounts for the highest volume of noncash transactions worldwide?      |  |  | | --- | --- | | A. | Checks. |  |  |  | | --- | --- | | B. | Card payments. |  |  |  | | --- | --- | | C. | Debit transfers. |  |  |  | | --- | --- | | D. | E-money payments. |  |  |  | | --- | --- | | E. | Credit transfers. | |

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| 84. | Which of the following observations concerning e-money is NOT true?      |  |  | | --- | --- | | A. | Check writing lays the foundation of e-money. |  |  |  | | --- | --- | | B. | E-money removes the middleman from a transaction. |  |  |  | | --- | --- | | C. | The e-money user transfers the money from his or her bank account to the account of the funds' receiver. |  |  |  | | --- | --- | | D. | The primary function of e-money is to facilitate transactions on the Internet. |  |  |  | | --- | --- | | E. | E-money is not a cost efficient way of managing transactions that are small in value. | |

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| 85. | Which of the following observations is NOT true?      |  |  | | --- | --- | | A. | The use of electronic methods of payment is far higher in major developed countries other than the United States. |  |  |  | | --- | --- | | B. | E-money payments are virtually nonexistent in the United States. |  |  |  | | --- | --- | | C. | Money stored in e-money accounts and cards is covered by deposit insurance. |  |  |  | | --- | --- | | D. | U.S. FIs have been slow in adopting and using online banking and electronic payment methods extensively. |  |  |  | | --- | --- | | E. | All of the above. | |

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| 86. | Settlement risk is important because      |  |  | | --- | --- | | A. | of the interdependent nature of many international transactions. |  |  |  | | --- | --- | | B. | of the impact on sovereign country risk. |  |  |  | | --- | --- | | C. | problems may induce countries to limit the freedom of international capital flows. |  |  |  | | --- | --- | | D. | the electronic funds transfer network itself may become insolvent. |  |  |  | | --- | --- | | E. | the Fed's guarantee may prove to be even more costly to the Federal government than the thrift debacle. | |

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| 87. | Daylight overdrafts occur when      |  |  | | --- | --- | | A. | FIs in different time zones clear transactions. |  |  |  | | --- | --- | | B. | FI debits exceed credits during the day. |  |  |  | | --- | --- | | C. | FI credits exceed debits during the day. |  |  |  | | --- | --- | | D. | the sum of all debits transmitted over the system exceed the sum of all credits during the day. |  |  |  | | --- | --- | | E. | the sum of all credits transmitted over the system exceed the sum of all debits during the day. | |

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| 88. | On Fedwire, daylight overdraft      |  |  | | --- | --- | | A. | is a bank's positive intraday balance in its reserve account at the Fed. |  |  |  | | --- | --- | | B. | does not occur under the current payments system. |  |  |  | | --- | --- | | C. | invites a fee is 50 basis points, quoted as an annual rate on the basis of a 24-hour day. |  |  |  | | --- | --- | | D. | has a seasonal component. |  |  |  | | --- | --- | | E. | is not a potential source of instability in the financial markets. | |

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| 89. | Suppose that the doubling of a bank's deposit funding allows the bank to triple its loan output. What can you conclude about the bank's production technology?      |  |  | | --- | --- | | A. | It exhibits economies of scale using the production approach. |  |  |  | | --- | --- | | B. | It exhibits diseconomies of scale using the production approach. |  |  |  | | --- | --- | | C. | It exhibits diseconomies of scale using the intermediation approach. |  |  |  | | --- | --- | | D. | It exhibits economies of scale using the intermediation approach. |  |  |  | | --- | --- | | E. | It exhibits neither economies nor diseconomies of scale. | |

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| 90. | Why has empirical evidence on economies of scale and scope been so contradictory?      |  |  | | --- | --- | | A. | Data on bank costs are unavailable. |  |  |  | | --- | --- | | B. | Efficiency may be related to overall market conditions. |  |  |  | | --- | --- | | C. | Efficiency may be related to non-quantifiable variables such as managerial ability. |  |  |  | | --- | --- | | D. | Neither the intermediation nor the production approach conform to reality. |  |  |  | | --- | --- | | E. | The methodology to detect economies of scale and scope are still very rudimentary. | |

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| 91. | Which of the following is consistent with economies of scope? The subscript "b" refers to a banking firm, "s" for a securities firm, "AC" is average costs and "TC" is total costs.      |  |  | | --- | --- | | A. | ACb + s > ACb + ACs. |  |  |  | | --- | --- | | B. | ACb + s = ACb + ACs. |  |  |  | | --- | --- | | C. | ACb + s < ACb + ACs. |  |  |  | | --- | --- | | D. | TCb + s < TCb + TCs. |  |  |  | | --- | --- | | E. | TCb + s > TCb + TCs. | |

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| 92. | Which is the most important banking area in which technology has had an impact?      |  |  | | --- | --- | | A. | Cash-management services. |  |  |  | | --- | --- | | B. | Residential mortgage lending. |  |  |  | | --- | --- | | C. | Issuance of certificates of deposit. |  |  |  | | --- | --- | | D. | Credit approval. |  |  |  | | --- | --- | | E. | None of the above. | |

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| 93. | Which of the following is NOT a wholesale banking service?      |  |  | | --- | --- | | A. | Controlled disbursement accounts. |  |  |  | | --- | --- | | B. | Account reconciliation. |  |  |  | | --- | --- | | C. | Electronic funds transfer. |  |  |  | | --- | --- | | D. | Electronic initiation of letters of credit. |  |  |  | | --- | --- | | E. | Automated teller machines. | |

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| 94. | Which of the following is NOT a retail banking service?      |  |  | | --- | --- | | A. | Check deposit services. |  |  |  | | --- | --- | | B. | Point of sale/debit cards. |  |  |  | | --- | --- | | C. | Telephone bill paying services. |  |  |  | | --- | --- | | D. | Pre-authorized debits/credits. |  |  |  | | --- | --- | | E. | Automated teller machines. | |

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|  | Consider the following two FIs: Company A has $500 million in total assets and total costs equal to $200 million. Company B has $60 million in total assets and total costs equal to $24 million. |

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| 95. | What are average costs for each FI?      |  |  | | --- | --- | | A. | 0.40 for A and 2.50 for B. |  |  |  | | --- | --- | | B. | 2.50 for both A and B. |  |  |  | | --- | --- | | C. | 2.50 for A and 0.40 for B. |  |  |  | | --- | --- | | D. | 0.40 for both A and B. |  |  |  | | --- | --- | | E. | Insufficient information. | |

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| 96. | What can you conclude about the cost structure of the market consisting of the two FIs?      |  |  | | --- | --- | | A. | There are significant economies of scale because both companies A and B coexist in the industry. |  |  |  | | --- | --- | | B. | There are no significant economies of scale because company A is much larger than company B. |  |  |  | | --- | --- | | C. | There are no significant economies of scale because the unit costs are constant. |  |  |  | | --- | --- | | D. | There are significant economies of scale because the unit costs decline as size increases. |  |  |  | | --- | --- | | E. | There are no significant economies of scale because the unit costs increase as size increases. | |

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| 97. | Assume a third FI (company C) operates in the same market with two FIs, and it has $800 million in assets and total costs of $420 million. What can you conclude about the cost structure of the FIs in this market?      |  |  | | --- | --- | | A. | There are significant economies of scale because companies A, B, and C coexist in the industry. |  |  |  | | --- | --- | | B. | There are no significant economies of scale because both companies A and C are much larger than company B. |  |  |  | | --- | --- | | C. | There are no significant economies of scale because the unit costs are constant. |  |  |  | | --- | --- | | D. | There are significant economies of scale beyond the $500 million asset size. |  |  |  | | --- | --- | | E. | There are no significant economies of scale because the unit costs increase as size increases. | |

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|  | A new computer system is expected to cost $40 million and generate annual savings of $12 million over the next five years. |

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| 98. | Should the bank invest in this project if the discount rate is 12 percent?      |  |  | | --- | --- | | A. | Yes, because the net present value of the project is $3,257,314. |  |  |  | | --- | --- | | B. | No, because the net present value of the project is -$3,257,314. |  |  |  | | --- | --- | | C. | Yes, because the net present value of the project is $20 million. |  |  |  | | --- | --- | | D. | No, because the net present value of the project is -$20 million. |  |  |  | | --- | --- | | E. | Yes, because the net present value of the project is $4,980,000. | |

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| 99. | Should the bank invest in this project if the discount rate is 18 percent?      |  |  | | --- | --- | | A. | Yes, because the net present value of the project is $2,473,948. |  |  |  | | --- | --- | | B. | No, because the net present value of the project is -$2,473,948. |  |  |  | | --- | --- | | C. | Yes, because the net present value of the project is $24.8 million. |  |  |  | | --- | --- | | D. | No, because the net present value of the project is -$24.8 million. |  |  |  | | --- | --- | | E. | Yes, because the net present value of the project is $1,342,688. | |

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| 100. | What is the IRR for this investment?      |  |  | | --- | --- | | A. | 11.18 percent. |  |  |  | | --- | --- | | B. | 12.98 percent. |  |  |  | | --- | --- | | C. | 15.24 percent. |  |  |  | | --- | --- | | D. | 12.00 percent. |  |  |  | | --- | --- | | E. | 18.00 percent. | |

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|  | Spruce Bank is planning to automate some of its back office functions and reduce operating costs. The installation of new computers and software will require an initial investment of $1,000,000. The savings generated because of reduced personnel cost is $200,000 per year. The bank uses an 8 percent rate of discount to evaluate cost saving projects which are expected to last 10 years. |

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| 101. | Should the bank undertake the project given the above information?      |  |  | | --- | --- | | A. | Yes, because the NPV of the project is $500,000. |  |  |  | | --- | --- | | B. | Yes, because the NPV of the project is $342,016. |  |  |  | | --- | --- | | C. | No, because the NPV of the project is -$500,000. |  |  |  | | --- | --- | | D. | No, because the NPV of the project is -$201,458. |  |  |  | | --- | --- | | E. | No, because the IRR of the project is lower than 12 percent. | |

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| 102. | On further analysis, it is estimated that the project has a finite life of 5 years, i.e. further investment will be required to generate the same savings. Should they undertake the project if they assume a five-year horizon for evaluating the project?      |  |  | | --- | --- | | A. | Yes, because the NPV of the project is $500,000. |  |  |  | | --- | --- | | B. | Yes, because the NPV of the project is $342,016. |  |  |  | | --- | --- | | C. | No, because the NPV of the project is -$500,000. |  |  |  | | --- | --- | | D. | No, because the NPV of the project is -$201,458. |  |  |  | | --- | --- | | E. | No, because the IRR of the project is greater than 15 percent. | |

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| 103. | What must be the minimum annual cost savings in order to accept this project? Assume a five-year horizon and 8 percent discount rate.      |  |  | | --- | --- | | A. | $200,000. |  |  |  | | --- | --- | | B. | $222,256. |  |  |  | | --- | --- | | C. | $250,456. |  |  |  | | --- | --- | | D. | $279,724. |  |  |  | | --- | --- | | E. | $500,913. | |

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| 104. | The maximum cost savings that can be generated with this new equipment has been estimated to be $264,237. In order to accept this project, what is the minimum number of years the projected savings must be realized before the project breaks even?      |  |  | | --- | --- | | A. | 3.7 years. |  |  |  | | --- | --- | | B. | 4.7 years. |  |  |  | | --- | --- | | C. | 5.7 years. |  |  |  | | --- | --- | | D. | 6.7 years. |  |  |  | | --- | --- | | E. | 7.7 years. | |

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|  | The following information is available on the average costs of the three major banks in a given local market. Bank A has assets of $10 million and average costs are 15 percent, Bank B has assets of $20 million and average costs of 13 percent while Bank C has assets of $30 million with average costs of 12 percent. Average costs are measured as a proportion of total assets. |

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| 105. | The above figures indicate that      |  |  | | --- | --- | | A. | there are significant economies of scale still present in the local markets. |  |  |  | | --- | --- | | B. | there are significant diseconomies of scale still present in the local markets. |  |  |  | | --- | --- | | C. | there are significant economies of scope still present in the local markets. |  |  |  | | --- | --- | | D. | there are significant diseconomies of scope still present in the local markets. |  |  |  | | --- | --- | | E. | there is not enough information to determine economies of scale or scope. | |

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| 106. | Bank B plans to acquire Bank A and in the process cut costs by $100,000. What is the combined bank's average costs?      |  |  | | --- | --- | | A. | 12.00 percent. |  |  |  | | --- | --- | | B. | 12.67 percent. |  |  |  | | --- | --- | | C. | 13.00 percent. |  |  |  | | --- | --- | | D. | 13.33 percent. |  |  |  | | --- | --- | | E. | 15.00 percent. | |

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| 107. | By how much should operating costs of the combined entity (Bank A + Bank B) be reduced in order to stay competitive in the local market, ceteris paribus?      |  |  | | --- | --- | | A. | $900,000. |  |  |  | | --- | --- | | B. | $600,000. |  |  |  | | --- | --- | | C. | $500,000. |  |  |  | | --- | --- | | D. | $400,000. |  |  |  | | --- | --- | | E. | $300,000. | |

**Matching Questions**

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| 108. | Choose among the following services provided by modern FIs.      |  |  |  | | --- | --- | --- | | 1. Funds concentration | A feature that records which checks have been paid by the FI. | \_\_\_\_ | | 2. Electronic initiation of letters of credit | Helping small firms set up electronic infrastructure for payment capabilities and interactive website capability. | \_\_\_\_ | | 3. Check deposit services | Encoding, endorsing, microfilming, and handling customers' checks. | \_\_\_\_ | | 4. Account reconciliation | Coordinating the need for funds early in the day with a wire transfer to allow disbursement of the funds later in the day. | \_\_\_\_ | | 5. Treasury management software | Combining the e-mail capability of the internet and the interbank payment networks to assist in the presentation and collection of invoices. | \_\_\_\_ | | 6. Facilitating business-to-business e-commerce | Providing for the transmission of invoices, purchase orders, and shipping notices automatically using FIs as clearinghouses. | \_\_\_\_ | | 7. Electronic lockbox | The transmission of payments and payment messages by CHIPS, SWIFT, Fedwire, etc. | \_\_\_\_ | | 8. Assisting small business entries into e-commerce | Allows customers in a network to access FI computers to initiate letters of credit. | \_\_\_\_ | | 9. Electronic billing | A centralized collection service where the payments are received on-line for corporate customers. | \_\_\_\_ | | 10. Electronic data interchange | Automating the information flow associated with the procurement and distribution of goods and services between businesses. | \_\_\_\_ | | 11. Wholesale lockbox | Moving funds from accounts in several FIs into a few centralized accounts at one FI. | \_\_\_\_ | | 12. Electronic funds transfer | Allows efficient management of multiple currency and security portfolios for trading and investment purposes. | \_\_\_\_ | | 13. Verifying identities | Using encryption technology to assist in the electronic transaction of business between customers and businesses. | \_\_\_\_ | | 14. Controlled disbursement accounts | A centralized collection service for corporate payments to reduce the delay in check clearing. | \_\_\_\_ | |