**Multiple Choice**

1. An information system is a combination of \_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_, and processes.
2. numbers, letters, symbols
3. protocol, resources, memory
4. **technology, data, people (ref 2-4)**
5. adaptation, data, people
6. processes, technology, data
7. An information system is directed towards the \_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_, organization, retrieval and communication of information.
8. validity, collection, standardization
9. **collection, manipulation, storage (ref 2-4)**
10. design, manipulation, administration
11. authority, usefulness, intelligence
12. collection, progression, usefulness
13. A set of interacting components, working together to form a complex, integrated whole in order to achieve some goal by taking inputs and processing them to produce outputs is known as a(n) \_\_\_\_\_\_\_\_\_\_\_ .
14. **system (ref 2-6)**
15. component
16. information
17. process
18. data
19. A \_\_\_\_\_\_\_\_\_ is an element of a system. For example, a television might be a part of a home entertainment system.
20. piece
21. section
22. unit
23. **component (ref 2-6)**
24. particle
25. \_\_\_\_\_\_\_\_\_ can take many different forms ranging from human organs to computer software.
26. **Components (ref 2-6)**
27. Data
28. Information
29. Subsystem
30. Interchange
31. The goal of a system is achieved by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .
32. adding steps to a simple process
33. organizing information into databases
34. **taking inputs and processing them to produce outputs (ref 2-7)**
35. removing information that is old or stale
36. none of the above
37. The process by which a system regulates itself by monitoring its own output is\_\_\_\_\_\_\_\_\_\_.
38. **feedback (ref 2-7)**
39. transfer
40. interchange
41. serial
42. interface
43. An open system is a system that \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
44. requires specific input
45. **interacts with its environment (ref 2-7)**
46. can be used by any user
47. uses cross -functional models
48. increases validity
49. A subsystem is a system that is \_\_\_\_\_\_\_\_\_\_\_\_\_.
50. under review for errors
51. located under the original system
52. not fully tested
53. allows for interaction with other systems
54. **part of a larger system (ref 2-8)**
55. \_\_\_\_\_\_\_\_\_\_\_\_ is the idea that in an open system there are many different paths to the final outcome.
56. Open source
57. **Equifinality (ref 2-8)**
58. Random access
59. Multiple paths
60. Closed destination
61. \_\_\_\_\_\_\_\_\_ is a set of functions intended to ensure the proper operation of a system.
62. **Control (ref 2-8)**
63. Initialization
64. Feedback
65. Formatting
66. Decision making
67. What is the most important component of any information system?
68. Hardware
69. Software
70. Business rule
71. **People (ref 2-10)**
72. Feedback
73. It is important to realize that an information system does not require a(n) \_\_\_\_\_\_\_\_\_\_\_\_.
74. person
75. input
76. **computer (ref 2-9)**
77. output
78. process
79. Information systems include the following operations:
80. resource, format, transfer, storage, processing
81. format, input, transfer, interface, control
82. input, interface, memory, processing, control
83. operating system, application software, random access memory
84. **input, processing, storage, output, control (ref 2-10)**
85. What are the six critical elements of an information system?
86. **Data, hardware, software, communication media, procedures, people (ref 2-11, 2-12)**
87. Money, technology, people, opportunity, planning, implementation
88. Data, systems, peripherals, hardware, decisions, people
89. Location, collection, openness, management, procedures, authority
90. Technology, management, executives, organization, departments, communication
91. Operating systems such as Windows and Linux are examples of what type of software?
92. Process software
93. Manufacturing software
94. **Systems software (ref 2-13)**
95. Application software
96. Enterprise resource software
97. While using word processing software to type your paper for an English course you realize that you are actually using \_\_\_\_\_\_\_\_\_\_ software to complete your work.
98. data
99. **application (ref 2-13)**
100. systems
101. anti virus
102. instant messaging
103. While waiting tables at a local restaurant, your last table ordered steak, lobster, and two soft drinks. Which elements of the restaurant information system would these items most likely be?
104. **Data (ref 2-14)**
105. Hardware
106. Software
107. Procedures
108. Communications media
109. \_\_\_\_\_\_ serves as facts that are manipulated by the system to produce information.
110. **Data (ref 2-14)**
111. Hardware
112. Software
113. Procedures
114. Communications media
115. The \_\_\_\_\_\_\_\_\_ performs computations, stores the data and software used by the system, displays information and provides the platform for users to interact with the system.
116. person
117. software
118. **hardware (ref 2-14)**
119. information
120. operating system
121. The \_\_\_\_\_\_\_\_\_\_ controls the operation of the computer, including how the data are retrieved, manipulated and communicated.
122. person
123. data
124. hardware
125. **software (ref 2-14)**
126. business rule
127. When sitting at the coffee shop on campus, you connect to the wireless network so that you can research a project for management class. What element of an information system is the wireless connection?
128. Data
129. People
130. Software
131. Hardware
132. **Communication media (ref 2-15)**
133. A statement that defines or constrains an aspect of a business with the intent of controlling behaviors within the business is called a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ .
134. **business rule (ref 2-18)**
135. business law
136. information system
137. organization
138. common sense
139. While placing an order on Amazon.com for your favorite movie, you find that you are not able to add the DVD to your cart because no more DVDs are in inventory. This is an example of \_\_\_\_\_\_\_\_\_ in action.
140. **business rules (ref 2-18)**
141. opportunity
142. technology
143. databases
144. inputs
145. What are the four categories of change that information systems enable within an organization?
146. Database, system software, feedback, integration
147. Input, storage, business rules, output
148. **Process improvements, automation, control, information flow (ref 2-21)**
149. Electronic Data Interchange, feedback, system, subsystem
150. Business rules, control, equifinality, open system
151. Online course registration and ATMs are an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
152. business rules
153. storage
154. workflow system
155. **customer self service (ref 2-21)**
156. data
157. Online registration verifies that you meet all prerequisites of a particular course before you can successfully register for the course. This information system is using \_\_\_\_\_\_\_\_\_ to ensure that business rules are followed.
158. a workflow system
159. personal applications
160. motivation
161. functional systems
162. **control (ref 2-23)**
163. To purchase office supplies for your office, a request is made for supplies in an information system. This system notifies your immediate supervisor that an order is waiting for his/her approval. If the order is approved, it is forwarded to the appropriate vendor and you are notified that the order is placed. What type of organizational change has this information system allowed for?
164. Knowledge
165. **Information flow (2-23)**
166. Control
167. Business process
168. Integration
169. Every two weeks you receive a paycheck at work. Your pay is based on the hours that you have tracked. At the end of the pay period the hours worked for everyone are gathered and processed. What type of information system is this?
170. Personal application
171. **Transaction processing system (2-28)**
172. Functional and management information system
173. Integrated enterprise system
174. Global system
175. A thermostat reaches a certain temperature and sends a signal to the air conditioner to begin cooling the room. Sending the signal to the air conditioner is known as what?
176. **Control (page 18)**
177. Feedback
178. Data
179. Information
180. A process
181. \_\_\_\_\_\_\_\_ controls the operation of the computer, including how the data are retrieved, manipulated, and communicated.
182. Information
183. A person
184. Data
185. Hardware
186. **Software (page 21)**
187. Which of the following is not a way that information systems help businesses cope with the ever-increasing amount of information?
188. They help gather large amounts of data quickly, easily, and reliably.
189. They allow businesses to store and organize very large amounts of data.
190. **They eliminate the human component from the system. (page 23)**
191. They perform their data manipulations quickly, accurately, and consistently.
192. They retrieve and output information in a variety of forms, as determined by the user.
193. When filling up with gasoline today, most people complete their entire transaction at the pump. This includes paying for the transaction, filling the vehicle up with fuel, and receiving a receipt for their transaction. What type of organizational change has this information system allowed for?
194. **Automation (page 26)**
195. Information flow
196. Control
197. Business process
198. Integration
199. \_\_\_\_\_\_\_\_\_\_ refers to the structured, electronic transmission of data between organizations.
200. Electronic funds transfer
201. **Electronic data interchange (page 29)**
202. Extensible markup language
203. Information flow
204. Integrated communication
205. \_\_\_\_\_\_\_\_\_\_ refers to a set of devices and protocols that enable computers to communicate with each other.
206. Unified communications
207. Integrated networking
208. **Communication media (page 20)**
209. Internet protocol
210. Instant messaging

**Reflection Questions**

1. Consider a process that you use often. What are three advantages of the process? What are three disadvantages? (ref Focusing story 2-2)

**Answers will vary**

1. How do you use information systems in your current job (past job)? Has your view of the information system changed? Why or why not? (ref Identifying Information Systems 2-4)

**Answers will vary**

1. Information systems play a large part in everyone’s life. Think of a past job or function that you may have held, how did that information system make your job easier? How much more difficult would your job have been without that information system? (ref Identifying Information Systems 2-5)

**Answers will vary**

1. Describe three information systems on campus and how you interact with them on a regular basis. (ref Identifying Information Systems 2-5)

**Answers will vary**

1. What type of information system can you think of that has no technology involved? (ref 2-9)

**Answers will vary**

**Short Answer Questions**

1. Why is it important for employees outside of an IT department to understand how information systems work? (ref 2-4)

**A: Regardless of your major or your career path, you’re going to be using information systems. Learning how to effectively use these systems can help you be more effective and successful in your career.**

**Rubric: 3 (Proficient)-Both aspects of the description correctly identified**

 **2 (Adequate)- One aspect of the description correctly identified**

 **1 (Limited)-No description correctly identified**

1. List the operations in the information processing cycle and include a description of each. (ref 2-10)

**A: Input: Collection of data and its conversion into a form that allows processing.**

**Processing: Manipulation and transformation of data.**

**Storage: Storage of data so that it can be retrieved at a later time**

**Output: Transformation of processed data into a form that can be understood by its eventual user.**

**Control: Enforcement of correct processing procedures.**

**Rubric: 3 (Proficient)-All aspects of the description correctly identified**

 **2 (Adequate)- Three aspects of the description correctly identified**

 **1 (Limited)-One or fewer aspects of the description correctly identified**

1. What is the most important element of an information system and why? (ref 2-10 & ref 2-12)

**A: People are the most important component of any information system. People are necessary to use and interpret the output of the information system. Even in information systems that seem like they are totally automated, people still need to monitor the system to make sure it is working correctly. Of course, people also build and maintain the system.**

**Rubric: 3 (Proficient)-All aspects of the description correctly identified**

 **2 (Adequate)- Two aspects of the description correctly identified**

 **1 (Limited)-No aspects of the description correctly identified**

1. What are three roles within an information system? Give a real world example of each of these roles. (ref 2-14)

**A: Data: The data serves as the facts that are manipulated by the system to produce information that is used by the reservation agent and hotel management.**

**Some of the data in this system would be a list of rooms, their status for each day (available or reserved), prices; payment data, data about the customer and data about who took the reservation**

**Hardware: The hardware performs computations, stores the data and software used by the system, displays information and provides the platform for users to interact with this system.**

**This system would use hardware such as the reservation agent’s personal computer, a computer that has the software for the system, hard drives that have the database that stores the data for the system, and printers for reports among others.**

**Software: The software controls the operation of the computer, including how the data are retrieved, manipulated and communicated.**

**Software in this system would include the operating system of the various computers that are part of the system as well as one or more applications that are specific to the task of making room reservations.**

**Communication media: This allows the various hardware components to communicate with each other.**

**Communication media includes the network cabling and other devices that facilitate communication such as routers.**

**Procedures: The procedures govern how the reservation agent and hotel managers should interact with the system.**

**Procedures include such things as instructions for how to get into the system, what data has to be entered, how to retrieve information and how to generate reports.**

**People: In this system, people provide input for the system, control how the system is used and interpret the information from the system**

**People include the customer, the reservation agent and hotel managers.**

**Rubric: 3 (Proficient)-Three roles with examples correctly identified**

 **2 (Adequate)- Two roles with examples correctly identified**

 **1 (Limited)-One or less roles with examples correctly identified**

1. How does an information system at a Movie Theater allow management to deal with information? Give three examples. (ref 2-17)

**A: Information systems let us gather large amounts of data quickly, easily and reliably. The system retrieves the item’s prices from a database, and the amount is added to the order’s total. Examples include: Provide the number of guests for each movie, concessions bought, quick recall of data (answers may vary)**

**Rubric: 3 (Proficient)-Three examples correctly identified**

 **2 (Adequate)- Two examples correctly identified**

 **1 (Limited)-One or less roles examples correctly identified**

1. What kind of business rules would be required for an information system that allowed for online ordering of books at your school? (ref 2-18)

**A:** **All businesses have rules that govern the operation of the business.**

 **Examples include: Sales tax added properly, do not sell more items than on inventory, calculate shipping (answers may vary)**

**Rubric: 3 (Proficient)-Three examples correctly identified**

 **2 (Adequate)- Two examples correctly identified**

 **1 (Limited)-One or less roles examples correctly identified**

1. Why are business rules necessary within an information system? (2-18)

**A: All businesses have rules that govern the operation of the business. Information systems enforce business rules by not allowing violations to occur.**

**Rubric: 3 (Proficient)-All aspects of the description correctly identified**

 **2 (Adequate)- One aspect of the description correctly identified**

 **1 (Limited)-No aspects of the description correctly identified**

1. What are three ways that information systems can facilitate change within an organization? (ref 2-21)

**A: process improvements, automation, control and information flow**

**Rubric: 3 (Proficient)-Three improvements with examples correctly identified**

 **2 (Adequate)- Two improvements with examples correctly identified**

 **1 (Limited)-One or less improvements with examples correctly identified**

1. List three types of common information systems and give an example for each type listed. (ref 2-27)

**A: Transaction processing systems (TPS) collect, monitor, process and store large volumes of data that are created by business processes. Examples include payroll processing systems, invoicing systems, and inventory control systems.**

**Managers use functional and management information systems to monitor, control and analyze the operation of functional areas. Examples include financial management systems, sales force automation systems, materials requirements planning (MRP) systems and benefits administration systems**

**An integrated system has multiple applications into a cohesive interrelated system. For example, enterprise resource planning systems provide an integrated set of modules that carry out the information processing and reporting systems for the entire organization.**

**Interorganizational systems span organizational boundaries to connect companies to suppliers and customers.**

**Global systems are simply interorganizational systems that cross national boundaries. These systems are often more complex due to cross-national differences in language, currency and culture.**

**Rubric: 3 (Proficient)-Three systems with examples correctly identified**

 **2 (Adequate)- Two systems with examples correctly identified**

 **1 (Limited)-One or less systems with examples correctly identified**

1. Describe Electronic Data Interchange (EDI). (ref 2-29)

**A:** **EDI allows the systems in one organization to directly interact with those in a partner organization. Many electronic business systems enable partner organizations to interact seamlessly and thus are considered interorganizational systems.**

**Rubric: 3 (Proficient)-All aspects of the description correctly identified**

 **2 (Adequate)- One aspect of the description correctly identified**

 **1 (Limited)-No aspects of the description correctly identified**