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PRACTICE EXAM

PRACTICE EXAM NO. 1

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COSC372

Management Information Systems

2 hours and 15 minutes

Answer 20 Multiple Choice Questions | 1 Mark Each | Total 20 Marks. Answer these questions on the general purpose answer sheets provided

Answer 5 Short Answer | 4 Marks Each | Total 20 Marks in the answer booklet provided

Answer ANY THREE (3) Extended Response Questions (from the FOUR (4) questions provided) | 20 Marks Each | Total 60 Marks. Answer these in the answer booklet provided

The maximum available number of marks for this examination is 100

**MULTIPLE CHOICE**

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20 Questions | 1 Mark Each | Total 20 Marks.

**Question 1**

Which of the following best describes how new information systems result in legal gray areas?

- A) They work with networked, electronic data, which are more difficult to control than information stored manually.
- B) They result in new situations that are not covered by old laws.
- C) They are implemented by technicians rather than managers.
- D) They are created from sets of logical and technological rules rather than social or organizational mores.
- E) They are little understood by politicians or lawyers.

Answer:

B

Page Ref: 160

Difficulty: Moderate

AACSB: Ethical understanding and reasoning

CASE: Analysis in terms of assess

LO: 4.1: What ethical, social, and political issues are raised by information systems?

**Question 2**

Which of the following is *not* one of the current key technology trends that raises ethical issues?

- A) data storage improvements
- B) data analysis advancements
- C) increase in multimedia quality
- D) increase in use of mobile devices
- E) advances in networking technology

Answer:

C

Page Ref: 161

Difficulty: Easy

AACSB: Ethical understanding and reasoning

CASE: Comprehension

LO: 4.1: What ethical, social, and political issues are raised by information systems?

**Question 3**

The six important business objectives of information technology are new products, services, and business models; customer and supplier intimacy; survival; competitive advantage; operational excellence; and

- A) improved flexibility.
- B) improved decision making.

- C) improved business practices.
- D) improved efficiency.
- E) improved business value.

Answer:

B

Page Ref: 45

Difficulty: Easy

AACSB: Information technology

CASE: Concept

LO: 1.1: How are information systems transforming business, and why are they so essential for running and managing a business today?

#### Question 4

8) An example of a business using information systems to create new products and services is

- A) Wal-Mart's RetailLink system.
- B) the Mandarin Oriental hotel's customer-preference tracking system.
- C) Verizon's Web-based digital dashboard.
- D) Apple Inc.'s iPod.
- E) the San Francisco Giants play tracking system.

Answer:

D

Page Ref: 46

Difficulty: Difficult

AACSB: Information technology

CASE: Application

LO: 1.1: How are information systems transforming business, and why are they so essential for running and managing a business today?

#### Question 5

The interaction between information systems and organizations is influenced

- A) primarily by the decision making of middle and senior managers.
- B) by the development of new information technologies.
- C) by many factors, including structure, politics, culture, and environment.
- D) by two main microeconomic forces: capital and labor.
- E) by management decisions.

Answer:

C

Page Ref: 114

Difficulty: Moderate

AACSB: Information technology

CASE: Content

LO: 3.1: Which features of organizations do managers need to know about to build and use information systems successfully?

### Question 6

Under Mintzberg's classification of organizational structure, the knowledge-based organization where goods and services depend on the expertise and knowledge of professionals falls under the category of

- A) entrepreneurial structures.
- B) divisionalized bureaucracies.
- C) professional bureaucracies.
- D) adhocracies.
- E) machine bureaucracies.

Answer:

C

Page Ref: 120

Difficulty: Moderate

AACSB: Reflective thinking

CASE: Content

LO: 3.1: Which features of organizations do managers need to know about to build and use information systems successfully?

### Question 7

A SAN is a \_\_\_\_\_ network.

- A) server area
- B) storage area
- C) scalable architecture
- D) service-oriented architecture
- E) software arrangement

Answer:

B

Page Ref: 215

Difficulty: Easy

AACSB: Information technology

CASE: Content

LO: 5.1: What is IT infrastructure and what are the stages and drivers of IT infrastructure evolution?

### Question 8

\_\_\_\_\_ states that the value or power of a network grows exponentially as a function of the number of network members.

- A) Metcalfe's Law
- B) Moore's Law
- C) Law of scalability
- D) Law of outsourcing
- E) Law of networks

Answer:

A

Page Ref: 210

Difficulty: Difficult

AACSB: Information technology

CASE: Content

LO: 5.2: What are the components of IT infrastructure?

### Question 9

You are creating a database to store temperature and wind data from national airport locations. Which of the following fields is the most likely candidate to use as the basis for a primary key in the Airport table?

- A) address
- B) city
- C) airport code
- D) state
- E) day

Answer:

C

Page Ref: 255

Difficulty: Moderate

AACSB: Analytical thinking

CASE: Analysis

LO: 6.2: What are the major capabilities of database management systems (DBMS) and why is a relational DBMS so powerful?

### Question 10

Which of the following features enables a DBMS to reduce data redundancy and inconsistency?

- A) enforces referential integrity
- B) couples program and data
- C) data dictionary
- D) two-dimensional tables
- E) minimizes isolated files with repeated data

Answer:

E

Page Ref: 254

Difficulty: Difficult

AACSB: Information technology

CASE: Content

LO: 6.2: What are the major capabilities of database management systems (DBMS) and why is a relational DBMS so powerful?

### Question 11

Which of the following statements regarding information security is true?

- a) Process controls for IT security include assignment of roles for least privilege.
- b) Process controls for IT security include separation of duties.
- c) Process controls for IT security include documented procedures.
- d) All of the above

Answer:

D: All of the above

### Question 12

You have been hired as a security consultant for a law firm. Which of the following constitutes the greatest source for network security breaches to the firm?

- A) Wireless network
- B) Employees
- C) Authentication procedures
- D) Lack of data encryption
- E) Software quality

Answer:

B. Employees

Page Ref: 349

Difficulty: Moderate

AACSB: Analytical thinking

CASE: Evaluation in terms of assess

LO: 8.1: Why are information systems vulnerable to destruction, error, and abuse?

### Question 13

Information \_\_\_\_\_ exists when one party in a transaction has more information that is important for the transaction than the other party.

- A) Transparency
- B) Asymmetry
- C) Complexity
- D) Discrimination
- E) Imbalance

Answer:

B

Page Ref: 421

Difficulty: Easy

AACSB: Application of knowledge

CASE: Comprehension

LO: 10.1: What are the unique features of e-commerce, digital markets, and digital goods?

### Question 14

Digital goods are goods that are

- A) Produced digitally.
- B) Sold over digital networks.
- C) Delivered digitally.
- D) Used with digital equipment.
- E) Created with software.

Answer:

C

Page Ref: 424

Difficulty: Moderate

AACSB: Application of knowledge

CASE: Comprehension

LO: 10.1: What are the unique features of e-commerce, digital markets, and digital goods?

### Question 15

The last step in the knowledge management value chain is

- A) feedback.
- B) acquire.
- C) disseminate.
- D) store.
- E) apply.

Answer:

E

Page Ref: 464

Difficulty: Moderate

AACSB: Analytical thinking

CASE: Analysis

LO: 11.1: What is the role of knowledge management and knowledge management programs in business?

### Question 16

Expertise of organizational members that has not been formally documented best describes

- A) wisdom.
- B) information.
- C) data.
- D) experience.
- E) tacit knowledge.

Answer:

E

Page Ref: 462

Difficulty: Moderate

AACSB: Reflective thinking

CASE: Content

LO: 11.1: What is the role of knowledge management and knowledge management programs in business?

### Question 17

Which type of decision is calculating gross pay for hourly workers?

- A) semistructured
- B) procedural
- C) structured
- D) unstructured
- E) ad hoc

Answer:

C

Page Ref: 500

Difficulty: Easy

AACSB: Analytical thinking

CASE: Analysis

LO: 12.1: What are the different types of decisions and how does the decision-making process work? How do information systems support the activities of managers and management decision making?

### Question 18

The role of entrepreneur falls into which of Mintzberg's managerial classifications?

- A) decisional
- B) informational
- C) interpersonal
- D) symbolic
- E) communicative

Answer:

A

Page Ref: 504

Difficulty: Difficult

AACSB: Reflective thinking

CASE: Content



LO: 12.1: What are the different types of decisions and how does the decision-making process work? How do information systems support the activities of managers and management decision making?

### Question 19

The dimension of \_\_\_\_\_ describes whether the structure of data is consistent within an information source.

- A) completeness
- B) accuracy
- C) validity
- D) consistency
- E) integrity

Answer:

E

Page Ref: 505

Difficulty: Difficult

AACSB: Reflective thinking

CASE: Content

LO: 12.1: What are the different types of decisions and how does the decision-making process work? How do information systems support the activities of managers and management decision making?

### Question 20

Behavioral models of management sees managers as being \_\_\_\_\_ than does the classical model.

- A) more systematic
- B) more informal
- C) more reflective
- D) more well organized
- E) less reactive

Answer:

B

Page Ref: 503

Difficulty: Moderate

AACSB: Reflective thinking

CASE: Content

LO: 12.2: How do business intelligence and business analytics support decision making?

**SHORT ANSWER**

5 Questions | 4 Marks Each | Total 20 Marks.

**Question 21**

Laudon (2016) suggests the following five moral dimensions when analysing ethical, social and political issues raised by information systems:

- Information Rights and Obligations.
- Property Rights and Obligations.
- Accountability and Control.
- System Quality.
- Quality of Life.

Explain each of these five moral dimensions substantiating your explanations with one example of each.

**Answer:**

Key technology trends include the following: (1) Computer power doubling every 18 months: ethical impact—because more organizations depend on computer systems for critical operations, these systems are vulnerable to computer crime and computer abuse; (2) Data storage costs are rapidly declining: ethical impact—it is easy to maintain detailed databases on individuals—who has access to and control of these databases?; (3) Data analysis advances: ethical impact—vast databases full of individual information may be used to develop detailed profiles of individual behavior; and (4) Networking advances and the Internet: ethical impact—it is easy to copy data from one location to another. Who owns data? How can ownership be protected?; (5) Mobile device growth impact: ethical impact—individual cell phones may be tracked without user consent or knowledge.

Page Ref: 160-161

Difficulty: Moderate

AACSB: Written and oral communication

CASE: Synthesis in terms of applying

LO: 4.1: What ethical, social, and political issues are raised by information systems?

(4 Marks)

**Question 22**

You are starting a small bike messenger company. Given your type of services (hand-delivering packages within a small geographical area), could your firm be a digital firm?

Explain your answer using examples.

If so, what would make this a digital firm?

**Answer:**

Being a digital firm doesn't purely rely on having digital goods and services. A digital firm would have most of its relationships with customers, suppliers, and employees be digitally enabled. Ordering deliveries, assigning deliveries, managing employees and assignments could certainly be digitally enabled; using mobile phones, information systems, and handheld devices to connect customers, delivery management, and bike messengers.

Page Ref: 44

Difficulty: Difficult

AACSB: Analytical thinking

CASE: Synthesis

LO: 1.1: How are information systems transforming business, and why are they so essential for running and managing a business today?

(4 Marks)

### Question 23

The small publishing company you work for wants to create a new database for storing information about all of their author contracts.

What factors will influence how you design the database?

Answer:

Answers will vary, but should include some assessment of data quality, business processes and user needs, and relationship to existing IT systems. Key points to include are:

Data accuracy when the new data is input, establishing a good data model, determining which data is important and anticipating what the possible uses for the data will be, beyond looking up contract information, technical difficulties linking this system to existing systems, new business processes for data input and handling, and contracts management, determining how end users will use the data, making data definitions consistent with other databases, what methods to use to cleanse the data.

Page Ref: 253-262

Difficulty: Moderate

AACSB: Analytical thinking

CASE: Synthesis

LO: 6.2: What are the major capabilities of database management systems (DBMS) and why is a relational DBMS so powerful?

(4 Marks)

### Question 24

Customer Relationship Management, Supply Chain Management, and Enterprise Systems are all major enterprise applications. Select two of these enterprise applications and give brief explanations of each.

Answer:

**Enterprise systems** are based on a suite of integrated software modules and a common central database. Enterprise systems utilize enterprise software to support financial and accounting, human resources, manufacturing and production, and sales and marketing processes. Enterprise systems provide many benefits including an enterprise-enabled organization, improved management reporting and decision making, a unified information systems technology platform, and more efficient operations and customer-driven business processes.

**Supply chain management systems** help an organization better manage its supply chain, including planning, sourcing, making, delivering, and returning items. Supply chain management software can be categorized as a supply chain planning system or as a supply chain execution system. A supply chain planning system enables a firm to generate demand forecasts for a product and to develop sourcing and manufacturing plans for that product. A

supply chain execution system manages the flow of products through distribution centers and warehouses to ensure that products are delivered to the right locations in the most efficient manner. Supply chain management benefits include improved customer service and responsiveness, cost reduction, and cash utilization.

**Customer relationship management systems** help firms maximize the benefits of their customer assets. These systems capture and consolidate data from all over the organization and then distribute the results to various systems and customer touch points across the enterprise. Customer relationship management systems can be classified as operational or as analytical. Operational CRM refers to customer-facing applications, such as sales force automation, call center and customer service support, and marketing automation. Analytical CRM refers to customer relationship management applications dealing with the analysis of customer data to provide information for improving business performance. Benefits include increased customer satisfaction, reduced direct marketing costs, more effective marketing, and lower costs for customer acquisition and retention.

Page Ref: 382-404

Difficulty: Moderate

AACSB: Analytical thinking

CASE: Analysis in terms of summarize

LO: 9.1: How do enterprise systems help businesses achieve operational excellence?

(4 Marks)

### Question 25

What is knowledge management?

What types of knowledge might a company such as a taxi service have, and could a taxi service benefit from knowledge management?

Answer:

Knowledge management is the set of processes developed in an organization to create, gather, store, disseminate, and apply the firm's knowledge. A taxi company's knowledge might include explicit knowledge, such as maps and routes between destinations. Tacit knowledge would include the experience of drivers, such as the best alternate routes between destinations or passenger needs. A taxi service might benefit from a system that gave drivers guides on routes that included alternate routes drivers had found. It might benefit from a learning management system that trained drivers for locations, destinations, and alternate routes.

Page Ref: 461-464

Difficulty: Easy

AACSB: Analytical thinking

CASE: Evaluation

LO: 11.1: What is the role of knowledge management and knowledge management programs in business?

(4 Marks)

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## EXTENDED RESPONSE

Answer THREE (3) Questions of the FOUR (4) Questions provided  
20 Marks Each | Total 60 Marks.

### Question 26. Information Security

- a) Outline three (3) of the security challenges faced by wireless networks giving an example of each. (10 Marks)
- b) How is the security of a firm's information system and data affected by its people, organization, and technology?  
Is the contribution of one of these dimensions any more important than the other?  
Why? (10 Marks)

Answer:

- a) Wireless networks are vulnerable because radio frequency bands are easy to scan.

Both Bluetooth and Wi-Fi networks are susceptible to hacking by eavesdroppers. Local area networks (LANs) using the 802.11 standard can be easily penetrated by outsiders armed with laptops, wireless cards, external antennae, and hacking software. Hackers use these tools to detect unprotected networks, monitor network traffic, and, in some cases, gain access to the Internet or to corporate networks. Wi-Fi transmission technology was designed to make it easy for stations to find and hear one another.

The *service set identifiers (SSIDs)* identifying the access points in a Wi-Fi network are broadcast multiple times and can be picked up fairly easily by intruders' sniffer programs.

Wireless networks in many locations do not have basic protections against war-driving, in which eavesdroppers drive by buildings or park outside and try to intercept wireless network traffic. A hacker can employ an 802.11 analysis tool to identify the SSID. An intruder that has associated with an access point by using the correct SSID is capable of accessing other resources on the network, using the Windows operating system to determine which other users are connected to the network, access their computer hard drives, and open or copy their files.

Intruders also use the information they have gleaned to set up rogue access points on a different radio channel in physical locations close to users to force a user's radio NIC to associate with the rogue access point. Once this association occurs, hackers using the rogue access point can capture the names and passwords of unsuspecting users.

Page Ref: 339

Difficulty: Difficult

AACSB: Written and oral communication

CASE: Analysis in terms of examine

LO: 8.1: Why are information systems vulnerable to destruction, error, and abuse?

- b) There are various technological essentials to protecting an information system: firewalls, authentication, encryption, anti-virus protection etc. Without technology implemented correctly, there is no security. A firm's employees are its greatest threat,

in terms of embezzlement and insider fraud, errors, and lax enforcement of security policies. Probably the most important dimension is organization, because this is what determines a firm's business processes and policies.

The firm's information policies can most enhance security by stressing intelligent design of security systems, appropriate use of security technology, and the usability of its security processes. Specifically, these systems need to govern the 'CIA Triad' or the Confidentiality, Integrity, and Authenticity of the information they contain.

Page Ref: 337-368

Difficulty: Difficult

AACSB: Written and oral communication

CASE: Evaluation in terms of assess

LO: 8.1: Why are information systems vulnerable to destruction, error, and abuse?

### Question 27. Ethics

- a) One of the capabilities of Internet communication is the ability of the individual to appear essentially anonymous by using made-up user names.  
Is anonymity the same thing as privacy, and should anonymity be a right?  
What ethical issues are raised by increased anonymity? (12 Marks)
- b) What do are the primary ethical, social, and political issues regarding the quality of a software product? (8 Marks)

Answer:

#### a) Anonymity

Your answer should include a definition of privacy and an attempt to differentiate between anonymity and privacy, as well as an understanding that anonymity can result in a breakdown of clear accountability or responsibility for actions.

A sample answer is: Privacy is the claim to be left alone, free from surveillance. This is different from anonymity, in which nobody knows who you are or what actions you take even in a public arena.

While I would like privacy to be a right, I believe it is impractical to make it a fundamental inalienable right (like freedom and life), but the law should provide for a culturally-relevant, base level of privacy. This is consistent with the moral dimension of quality of life (Topic 1).

While individuals would continue to be able to trade their (legal) right for privacy by their consumption of goods or services, as they can now, I believe the law must set certain minimum requirements for the ability of a user to restore the privacy they have 'sold' to the providers of those goods or services without the need to resort to changed or temporary identities – both of which are a form of anonymity.

Society's control mechanism for the application of a common ethical framework is personal accountability – together with shared responsibility and due legal processes. Anonymity raises ethical issues because it – partially – breaks down the society's ability to impose accountability on to individuals for their actions. Some individuals, if they feel they are anonymous, may have lapses in ethical behavior because anonymity means they are no longer accountable for their actions.

While the best arrangement would be if all parties – individuals, corporations and governments – adhered to a commonly-held, ethical framework, the closest society is likely to come to this arrangement is a multilayered system of privacy that includes partial disclosure, transparency, advocacy and anonymity.

Page Ref: 168-170

Difficulty: Difficult

AACSB: Ethical understanding and reasoning

CASE: Evaluation in terms of assess

LO: 4.4: How have information systems affected laws for establishing accountability, liability, and the quality of everyday life?

b) Software:

Answers will vary, but should include a description of the software manufacturer's responsibility in software quality and an understanding of the difference between social concerns (culture, lifestyle effects) and political concerns (legal, institutional effects).

Sample answer: The central quality-related ethical issue that software quality raises is what responsibility does a software manufacturer have in the performance of its software? At what point can the manufacturer conclude that its software achieves an adequate level of quality? The leading social issue raised by quality is: how is our society affected by low-quality software and is this a concern? And how much accountability should the software manufacturer have – for problems that arise from the use of contemporary software and also the disposal of software after it has ceased to be maintained. The central political concern raised by software quality is whether and how to enforce software quality minimums and standards, and what institutions are thus also held accountable.

Page Ref: 181-182

Difficulty: Moderate

AACSB: Ethical understanding and reasoning

CASE: Synthesis in terms of devising

LO: 4.4: How have information systems affected laws for establishing accountability, liability, and the quality of everyday life?

## Question 28. Operationalising Databases

Database technologies can be used to assist a firm to achieve various commercial strategies.

- a) Describe two ways database technologies could be used by an office stationery supply company to achieve low-cost leadership. (10 Marks)
- b) Describe two ways database technologies could be used by a toy manufacturer to achieve product differentiation. (10 Marks)

Answer:

- a) Sales databases could be used to make the supply chain more efficient and minimize warehousing and transportation costs. You can also use sales databases, as well as text mining and sentiment analysis, to determine what supplies are in demand by which customers and whether needs are different in different geographical areas. Alternate answer: Business intelligence databases could be used to predict future trends in office supply needs, to help anticipate demand, and to determine the most efficient methods of transportation and delivery.

Page Ref: 262-272

Difficulty: Difficult



AACSB: Information technology

CASE: Evaluation

LO: 6.3: What are the principal tools and technologies for accessing information from databases to improve business performance and decision making?

- b) Product databases could be made available to customers for greater convenience and ordering online. Databases could be used to track customer preferences and to help anticipate customer desires. Sales databases could also help clients such as toy stores anticipate when they would need to re-supply, providing an additional service. Alternate answer: Data mining, Web mining, and sentiment analysis of big data could help anticipate trends in sales or other factors to help determine new services and products to sell to clients.

Page Ref: 262-272

Difficulty: Difficult

AACSB: Information technology

CASE: Evaluation

LO: 6.3: What are the principal tools and technologies for accessing information from databases to improve business performance and decision making?

### Question 29. Cloud-based Computing

- a) Identify and describe five of the current trends in contemporary software platforms. (10 Marks)
- b) What is scalability? Why is it essential to the success of the modern business firm? (10 Marks)

Answer:

- a) Current trends in contemporary software platforms:
1. Growing use of Linux and open-source software—Open-source software is produced and maintained by a global community of programmers and is downloadable for free. Linux is a powerful, resilient open-source operating system that can run on multiple hardware platforms and is used widely to run Web servers.
  2. HTML5—This is the next evolution of HTML which simplifies embedding multimedia, rich media, and animation in the browser.
  3. Cloud-based services—In cloud-based services and software, users rent applications or storage space from online providers rather than running these applications or themselves or using local storage.
  4. Web services and service-oriented architecture—Web services are loosely coupled software components based on open Web standards that are not product-specific and can work with any application software and operating system. They can be used as components of Web-based applications linking the systems of two different organizations or to link disparate systems of a single company.
  5. Software outsourcing—Companies are purchasing their new software applications from outside sources, including application software packages, by outsourcing

- custom application development to an external vendor (that may be offshore), or by renting software services from an application service provider.
6. Cloud-based services—Companies are leasing infrastructure, hardware, and software from vendors, paying on a subscription or per-transaction basis.
  7. Mashups and apps—Mashups are programs created by combining two or more existing Internet applications. Apps are small programs developed for mobiles and handhelds, turning them into more robust computing tools.

Page Ref: 226-232

Difficulty: Difficult

AACSB: Analytical thinking

CASE: Analysis

LO: 5.4: What are the current trends in computer software platforms?

#### b) Scalability

Scalability is the ability of the computer, product, or system to expand to survey larger numbers of users without breaking down. It is important because as firms grow, they can quickly outgrow their infrastructure. As firms shrink, they can get stuck with excessive infrastructure purchased in better times. Any modern company must be able to make plans for the future, even though that future may be different than what was expected. Computer equipment is expensive, though dropping in price, and budgets must be planned to allow for new purchases, upgrades, and training. It is generally assumed that a successful company will need more computer capacity for more people as it follows a path to continued success.

Page Ref: 233

Difficulty: Moderate

AACSB: Analytical thinking

CASE: Evaluation

LO: 5.5: What are the challenges of managing IT infrastructure and management solutions?

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