PRACTICE EXAM

PRACTICE EXAM NO. 1

COSC572

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

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.

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.

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.

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

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

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

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 2 examples 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?
If so, what would make this a digital firm?
Explain your answer using examples.

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.

Postmates, in New York city or **Uber Eats** are two examples of small-size package delivery companies built around digital systems.

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?

What field would you make the unique primary key for the database? Explain your choice.

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.

Unique Primary Key would be a system-generated Author ID. I would use this field because it must be unique across the entire database – and independent of any other fields pulled in form other databases. For those reasons, I wouldn't use the author's publishing number (from an external DB like AUTHORSdb) or the author's name (as there may be multiple authors with the same name or someone could misspell their name.

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 detailed explanations of each, describing examples of their use in organizations you are familiar with.

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?

Could a company like a taxi service benefit from knowledge management?

Which of the following knowledge systems would the taxi service use? Give an example.

- Enterprise-wide knowledge management systems,
- Knowledge work systems,
- Intelligent techniques?

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. These are both enterprise-wide knowledge management systems.

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)

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.   (8 Marks)

b) In the field of information security, what is the CIA Triad?
   Explain each of these principles and how they combine to affect the design of an
   information system using examples. You may use either information system or non-
   information system examples.   (8 Marks)

c) 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?   (6 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

b) The CIA Triad is a simple but widely-applicable security model addressing the importance of Confidentiality, Integrity and Availability in the design of a secure system.

Confidentiality—The concept of keeping private information away from individuals who should not have access. Any time there is an unintentional release of information, confidentiality is lost. As an example, if a hacker can intercept an email between the CEO and the CIO and learn their latest plans, confidentiality has been broken and there is a lapse of security. Other attacks on confidentiality include sniffing, keystroke monitoring, and shoulder surfing.

Integrity—The concept of integrity means that data is consistent and that it hasn't been modified. This modification can result from access by an authorized or unauthorized individual or process. Integrity must also prevent modification of data while in storage or in transit. For example, if I could access my bank account and change the bank balance by adding a few zeroes then integrity would be lost.

Availability—The concept of availability covers that systems should provide reliable and timely access to the data and resources users are authorized to use. A good example of a loss of availability is a Denial of Service (DoS) attack: a perpetrator is not granted access, but their actions do prevent legitimate users from using the resource.

In a system, CIA should combine to protect leakage of the information (confidentiality), ensure it remains untampered with (integrity) and available for the legitimate use of authorised users (accessibility).

c) 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.

Question 27. Ethics

One of the capabilities of Internet communication is the ability of the individual to appear

essentially anonymous by using made-up user names.

   a) Is anonymity the same thing as privacy, and should anonymity be a right?
What ethical issues are raised by increased anonymity? (8 Marks)

   b) Is there a case for limited anonymity? Justify your answer with examples (8 Marks)

   c) Discuss where you believe increased anonymity would have a positive (two
examples) or negative (two examples) impact on society. (4 Marks)

Answer:

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. 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. I don't know if anonymity should be a right, but perhaps anonymity should not be permissible for some types of communication.

Examples:

Positive:

- Preserve privacy of individuals from commercial and government tracking.
- Enable users to control the extent of connectivity to commercial service providers and broader social networks – especially in the case of historical or abandoned services (old apps, mailing lists) or old social networks.

Negative:

- Apparent unaccountability of users online especially given breaches in Information Rights and Obligations, Property Rights and Obligations, Accountability and Control, System Quality, Quality of Life.
- More difficult to segment market of users if 'opt out' preferences restricted companies from tracking and targeting individuals; this would increase cost of provision of many services that are currently free.

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?

Question 28. Operationalising Databases

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

   a) Describe two different database technologies that could be used by an office
stationery supply company to achieve low-cost leadership. (10 Marks)

   b) Describe two different database technologies that 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.

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.

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. Give an example of each.

(10 Marks)

b) What is scalability? Why is it essential to the success of the modern business? Cite examples in your explanation. You may re-use examples from Assessment 1 or Assessment 2.

(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.
Example: Moodle (free version); OSDN, SourceForge

2. HTML5—This is the next evolution of HTML which simplifies embedding multimedia, rich media, and animation in the browser.
Example: Youtube's growing use of HTML5 rather than flash.

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.
Examples: Dropbox, Google Apps, Rackspace

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.
Examples: Office 365, LogMeIn

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.
Examples: Box.com; Google Apps, Salesforce.com

6. Cloud-based services—Companies are leasing infrastructure, hardware, and software from vendors, paying on a subscription or per-transaction basis.
Examples: Rackspace, AWS, Microsoft Azure

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.
Examples: Mashups: Zapier, IFTTT. Apps: Trello, Slack.

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?