

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)

DEPARTMENT OF BUSINESS AND TECHNOLOGY MANAGEMENT

Semester Final Examination

Summer Semester, A. Y. 2021-2022

Course No. : BTM 4609

Time : 3 hours

Course Title : Management Information Systems (MIS)

Full Marks : 150

Answer **all 6 (six)** questions. All questions carry equal marks. Marks of each question and corresponding CO and PO are written in the right margin with brackets.

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1. a) Describe the complementary social, managerial, and organizational assets required to optimize returns from information technology investments. 8 (CO1) (PO1)
- b) Compare the roles played by programmers, systems analysts, information systems managers, the chief information officer (CIO), chief security officer (CSO), and chief knowledge officer (CKO). 8 (CO1) (PO1)
- c) ABC Corp. is a global technology company that provides a range of products and services in the software, hardware, and e-commerce sectors. The company has implemented various types of information systems to support its operations, including transaction processing systems, management information systems, decision support systems, and executive support systems. However, the company's management is unsure about the effectiveness of these information systems and seeks to evaluate their performance and impact on the organization. 9 (CO4) (PO2)
- As an MIS consultant, you have been hired to evaluate the effectiveness of different types of information systems at ABC Corp. Your task is to analyze each type of information system and provide recommendations on how the company can optimize their usage to achieve better business outcomes.
2. a) What is the economic impact of information systems on organizations and business firms, and how can these systems generate value and contribute to overall financial performance? 8 (CO1) (PO1)
- b) Describe the business value chain model. How does it help organizations identify opportunities to create value and achieve a competitive advantage? 8 (CO1) (PO1)
- c) Sophie is a university student who relies on information systems to manage her university work and personal life. She uses a variety of tools and technologies to stay organized, stay informed, and stay connected. Here are some examples of how information systems have affected Sophie's everyday life: Sophie uses online tools like Google Classroom and Khan Academy to access learning materials and submit assignments. She also uses digital textbooks and online resources to research and study for exams. She uses social media platforms like Instagram and Snapchat to stay connected with friends and family. She also uses messaging apps like WhatsApp and iMessage to communicate with them in real-time. She uses streaming services like YouTube and Netflix to watch her favorite TV shows and movies. She also enjoys 9 (CO4) (PO2)

playing video games on her phone and computer. She uses e-commerce websites like Amazon and Etsy to purchase items online. She also uses online marketplaces like Depop and Poshmark to buy and sell secondhand clothing and accessories.

- i. How has information systems impacted Sophie's education and learning experience?
 - ii. How has information systems impacted Sophie's social life and ability to stay connected with others?
 - iii. How has information systems impacted Sophie's shopping habits?
 - iv. In what ways have information systems made Sophie's life more convenient and efficient?
3. a) Why are information policy, data administration, and data quality assurance essential for managing the firm's data resources? 8 (CO3) (PO7)
- b) Define and describe normalization and referential integrity and explain how they contribute to a well-designed relational database. 8 (CO2) (PO3)
- c) The Competitive Forces Model has been a popular framework for analyzing the competitive environment of an industry and identifying the key factors that determine profitability. With the increasing importance of IT infrastructure in modern businesses, organizations are faced with the challenge of investing in the right IT infrastructure to support their strategic goals and gain a competitive advantage. Explain the key components of the Competitive Forces Model and how it can be applied to the IT industry. 9 (CO2) (PO3)
4. a) How does the OSI model and its seven layers work together to facilitate communication between networked devices and ensure interoperability among different network technologies, and what are the specific functions and protocols associated with each layer that enable this complex process? 8 (CO2) (PO3)
- b) Elite Retail Store is a popular chain of retail stores that offers a wide range of products, including clothing, electronics, and home appliances. The store has been facing challenges in managing its inventory, which often leads to stock outs, overstocking, and mismanagement of product expiry dates. Additionally, the store has been receiving customer complaints regarding long wait times at checkout counters and difficulty in locating products. To address these challenges, Elite Retail Store decided to implement a technology to improve inventory management and enhance the customer experience. As an MIS consultant, you have been hired to suggest Elite Retail Store an appropriate technology to overcome its current problems. Which technology will you suggest, and why? 8 (CO4) (PO2)
- c) In what ways do the fundamental differences among Web 1.0, Web 2.0, and Web 3.0 reflect the evolution of internet technology and user behavior? What are the key features, benefits, and drawbacks of each version of the web in terms of their impact on online communication, information sharing, and user engagement, particularly in relation to the role of social media, big data analytics, cloud computing, and other emerging technologies in shaping the future of the internet? 9 (CO2) (PO3)

5. a) What are the key differences between symmetric key encryption and public key encryption, and in what scenarios would one be more appropriate than the other? 8 (CO2) (PO3)
- b) Suppose your business had an e-commerce Web site where it sold goods and accepted credit card payments. Discuss the major security threats to this web site and their potential impact. What can be done to minimize these threats? 8 (CO4) (PO2)
- c) XYZ Corp. is a large financial services company that manages a vast amount of sensitive data and client information. Due to the growing threat of cyber-attacks and data breaches, the company's IT department decided to implement firewalls to enhance its information systems security. 9 (CO4) (PO2)
- i. Why did XYZ Corp. decide to implement firewalls for its information systems security?
 - ii. What kind of firewall did XYZ Corp. select for its network infrastructure?
 - iii. How has the firewall impacted XYZ Corp.'s information systems security?
 - iv. What benefits has the implementation of the firewall brought to XYZ Corp.?
6. a) Supply chain management is less about managing the physical movement of goods and more about managing information. Discuss the implications of this statement. 8 (CO1) (PO1)
- b) How does the concept of the emerging internet-driven supply chain as a digital logistics nervous system reflect the integration of real-time data, advanced analytics, and digital communication technologies to enable end-to-end visibility, agility, and collaboration in supply chain management, and what are the key benefits and challenges associated with this approach to optimizing supply chain performance, enhancing customer satisfaction, and enabling sustainable business practices in a dynamic and competitive global marketplace? 8 (CO4) (PO2)
- c) Can you list the principal e-commerce business and revenue models and provide examples to explain how they operate? 9 (CO1) (PO1)