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

DEPARTMENT OF BUSINESS AND TECHNOLOGY MANAGEMENT

Mid-Semester Examination

Course No. : BTM 4609

Course Title : Management Information Systems

Summer Semester, A. Y. 2022-2023

Time : 1.5 hours

Full Marks : 75

Answer **all 3 (three)** questions. All questions carry equal marks. Marks of each question and corresponding CO and PO are written in the right margin within brackets.

1. a) Global IT spending was projected to reach around \$4.5 trillion in 2023, marking a significant increase from previous years. This includes spending on data centers, enterprise software, devices, IT services, and communication services. This reflects businesses' increasing reliance on information systems for operations, customer relationship management (CRM), supply chain management, and decision-making processes. 10 (CO2)  
(PO2)
- Requirement:**  
Analyze with examples why information systems are so essential for running and managing business today.
- b) Information system is a broader term. Understanding information systems requires a sound knowledge of all dimensions of the system. Identify various dimensions of information systems and components of each dimension with examples. 15 (CO1)  
(PO1)
2. a) What are the various types of services provided by cloud computing? Illustrate with examples. 05 (CO1)  
(PO1)
- b) What are the problems of managing data resources in a traditional file environment? How do database management systems solve the problems of traditional file environment? Discuss. 10 (CO1)  
(PO1)
- c) A university wants to develop a database system to manage information about students, courses, instructors, and departments. Courses are taught by instructors, and students enroll in these courses to complete their degree requirements. Note that one course must be assigned to only one instructor. Entities for the system are as follows: 10 (CO3)  
(PO3)
- Student (Attributes: StudentID, Name, Email)
  - Instructor (Attributes: InstructorID, Name, Department)
  - Course (Attributes: CourseCode, Title, Description)
  - Department (Attributes: DepartmentID, Name)

**Requirement:**

Considering the associated relationships and cardinalities, design an Entity-Relationship diagram for the system. And mention the primary keys and foreign keys for each entity.

3. a) Information systems serve the different management groups with different requirements and link the enterprise to improve organizational performance. Based on the above statement describe various types of information systems with their applications in business. 10 (CO1) (PO1)
- b) "Information systems (IS) have significant impacts on business. IS reduces the cost and changes the way of organizing works in business." 05 (CO2) (PO2)  
Analyze the statements using appropriate theories and concepts.
- c) Tesco has introduced a new strategy to lower costs and achieve cost leadership in the market. This strategy drew price-sensitive customers away from competitors and increased market share. Tesco adopted following strategies to have cost leadership in the market: 10 (CO2) (PO2)
- High utilization of assets through production of large outputs and spreading the fixed cost over large quantities.
  - Minimal direct and indirect cost in production and distribution stages
  - Strict control over supply chain to ensure low costs.

This strategy was sustainable for the company as it has the advantage of economies of scale in the market.

**Requirement:**

Analyze the cost leadership strategy of Tesco based on the Porter's Competitive Forces model.