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DBA Management information system – Assignment 2

1. Distinguish between a batch processing system and an online processing system. (6 marks)

Batch processing system is the computerized processing in which business transactions are accumulated over a period of time and prepared for processing as a single unit or batch.

(3)

Online transaction processing (OLTP) is the computerized processing in which each transaction is processed immediately. (3)

2. What are the advantages and disadvantages of using Enterprise Resource Planning (ERP) system? (8 marks) Hence, list FIVE measures that avoiding failed ERP implementations. (5 marks)

Advantages :

Improved access to data for operational decision making; Elimination of costly, inflexible legacy systems; Improvement of work processes based on best practices; Upgrade of technology infrastructure. (4)

Disadvantages :

Expense and time in implementation; Difficulty implementing change; Difficulty integrating with other systems; Risks in using one vendor; Risk of implementation failure (4)

FOUR measures that avoiding failed ERP implementations:

Assign a full-time project manager; Appoint an experienced, independent resource to oversee project and validate system performance; Allow sufficient time for transition

Spend substantial time and money for training; Define metrics to assess progress and identify risks; Keep project scope well defined; Be wary of modifying ERP software to conform to firm's business practices (Any 5 answers)

3. State and explain the challenges that will be met by an enterprise system of a multinational company. (16 marks)

Different Languages and Cultures (4)

- Multinational companies sometimes roll out standard IS applications for all to use
- To meet the needs of business partners and employees operating in other parts of the world, standard applications sometimes require extensive and costly customization

Disparities in Information System Infrastructure (4)

- Lack of a robust or a common information infrastructure can create problems
- Many countries' telecommunications services are controlled by a central government or operated as a monopoly
 - No incentives to provide fast and inexpensive customer service

Varying Laws and Customs Rules (4)

- Numerous laws can affect collection and dissemination of data
- For examples: Labor laws in some countries prohibit recording of worker performance

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data; Some countries have laws limiting the trans-border flow of data linked to individuals

Multiple Currencies (4)

- Enterprise system of multinational companies must conduct transactions in multiple currencies
- Systems must:
 - Be current with foreign currency exchange rates
 - Handle reporting and other transactions
 - Issue vendor payments and customer statements
 - Record retail store payments
 - Generate financial reports in the currency of choice

4. What is the difference between a programmed decision and a nonprogrammed decision? (4 marks)

Programmed decision: Decision made using a rule, procedure, or quantitative method; Easy to computerize using traditional information systems (2)

Nonprogrammed decision: Decision that deals with unusual or exceptional situations; Not easily quantifiable (2)

5. List and describe the basic kinds of reports produced by an Management Information System? (8 marks)

Scheduled report: produced periodically, or on schedule, such as daily, weekly, or monthly (2)

Key-indicator report: summary of previous day's critical activities (2)

Demand report: developed to give certain information at someone's request (2)

Exception report: automatically produced when a situation is unusual or requires management action (2)

Drill-down reports: provide increasingly detailed data about a situation Define decision support system. What are its characteristics? (2)

6. Define the term artificial intelligence. Give FOUR applications of artificial intelligence. (6 marks)

Artificial intelligence is the ability of computers to mimic or duplicate functions of the human brain. (2) **AI applications includes:** Make medical diagnoses; Explore for natural resources; Determine what is wrong with mechanical devices; Assist in designing and developing other computer systems. (4)

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7. What is a Knowledge Management System (KMS)? List and describe two kinds of knowledge involved in KMS. (6 marks)

Knowledge management system is the organized collection of people, procedures, software, databases, and devices to create, store, share, and use the organization's knowledge and experience (2).

Explicit knowledge: objective; can be measured and documented in reports, papers, and rules (2); **Tacit knowledge:** hard to measure and document; typically not objective or formalized (2)

8. Identify the basic components of an expert system and describe the role of each. (15 Marks)

Knowledge base (3)

Stores all relevant information, data, rules, cases, and relationships used by expert system

Create a knowledge base by :

- Assembling human experts
- Using fuzzy logic
- Using rules, such as IF-THEN statements
- Using cases

Inference engine (3)

Seeks information and relationships from knowledge base, Provides answers, predictions, and suggestions, like a human expert

The Explanation Facility (3)

Allows a user or decision maker to understand how the expert system arrived at certain conclusions or results

The Knowledge Acquisition Facility (3)

Provides convenient and efficient means of capturing and storing all components of knowledge base; Acts as an interface between experts and knowledge base

The User Interface (3)

Specialized user interface software is employed for designing, creating, updating, and using expert systems. Main purpose of user interface: makes development and use of an expert system easier for users and decision makers

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9. Who are the participants in the system development? (5 Marks)

Development team; Stakeholders; Users; Managers; Systems analysts, Programmers; Support personnel (Any 5, 1 for each correct answer)

10. List five typical reasons that initiating system development. (5 marks)

Problems with existing system; desire to exploit new opportunities such as a new e-commerce initiative; increasing competition; desire to make effective use of information, organizational growth; merger of acquisition; change in market or external environment, new laws or regulations. (Any 5, 1 for each correct answer)

11. List factors that have a strong influence on system development success. (6 marks)

Involvement of users and stakeholders; Top management support; Degree of change; Quality of project planning; Use of project management and CASE tools; Object-oriented systems development (6)

12. Define the different types of feasibility that system investigation and system analysis must consider. (10 marks)

Technical feasibility assesses whether the hardware, software, and other systems components can be acquired or developed to solve the problem. (2)

Economic feasibility involves the determination of whether the project makes financial sense and whether predicted benefits offset the cost and time needed to obtain them. (2)

Legal feasibility determines if there are laws that prevent or limit the project. (2)

Operational feasibility measures if a project has the ability to be put into action. (2)

Schedule feasibility determines if a project can be accomplished within a reasonable time period. (2)

13. Discuss the differences between logical and physical systems design (6 marks)

Logical design is the description of functional requirements of a system. It includes: Output, input, process, file, and database, telecommunications, procedures, controls, and security, personnel and job requirements (3)

Physical design is the specification of characteristics of system components necessary to put logical design into action such as characteristics of hardware, software, database, telecommunications, personnel, and procedure and control specifications (3)

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14. List and compare the factors when making decision regarding whether to obtain software from purchasing off the shelf software versus developing software. (10 marks)

Factor	Off the Shelf (Buy)	Developed (Make)
Cost	Low Cost	High Cost
Needs	Might not get what you need	Custom software to satisfy your needs
Quality	Usually high quality	Quality can vary depending on the programming team
Speed	Can acquire it now	Can take years to develop
Competitive advantage	Other organizations can have the same software and same advantage	Can develop a competitive advantage with good software

(2 marks for each factor and its comparison)

15. State the SIX reasons of systems maintenance and discuss the activities involved (14 marks)

Reasons for Maintenance: Changes in business processes; New requests from stakeholders, users, and managers; Bugs or errors in program; Technical and hardware problems; Corporate mergers and acquisitions; Government regulations; Change in operating system or hardware on which the application runs; Unexpected events. (Any 6, 1 mark for each correct answer)

Activities involved in system maintenance:

Slipstream upgrade: minor upgrade (2)

Patch: fix a problem or make small enhancement (2)

Release: significant program change requiring new documentation (2)

Version: major program change with new features (2)