

# 國立成功大學

## 113學年度碩士班招生考試試題

編 號：231

系 所：資訊管理研究所

科 目：管理資訊系統

日 期：0202

節 次：第 3 節

備 註：不可使用計算機

※ 考生請注意：本試題不可使用計算機。請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

**Part A.**

**1. Multiple choice questions.** Choose the one alternative that best completes the statement or answers the question.  
20%

(1) Which of the following options allows for the execution of computations and analytics at the network's outer edge instead of a central cloud?

A) Quantum computing    B) Edge computing    C) Massively parallel processing (MPP)    D) In-database analytics

(2) Sensitivity analysis is crucial in management support systems for various reasons. Which of the following options is NOT one of those reasons?

A) It allows flexibility and adaptation to changing conditions  
B) It permits the manager to input data to increase his/her confidence in the model  
C) It improves the mathematical optimality of the generated solutions  
D) It provides a better understanding of the model and the decision-making situation

(3) The question "What will be the total earnings if the inventory stocking costs are reduced by 10%?" is an example of which type of analysis?

A) Goal-seeking analysis    B) What-if analysis    C) Sensitivity analysis    D) Utility modeling

(4) The question "What type of analysis is represented by the following question: 'How many servers are required to decrease the waiting time for restaurant customers to below 9 minutes?'"

A) Goal-seeking analysis    B) What-if analysis    C) Sensitivity analysis    D) Utility modeling

(5) The AI-based learning technique that emphasizes learning and discovering features by the system, in addition to discovering the mapping from those features to the output/target, is called:

A) Machine learning    B) Deep learning    C) Reinforcement learning    D) Representation learning

(6) The option that strives to have computers produce ordinary spoken language so that people can understand them more easily is:

A) natural language processing    B) natural language generation  
C) natural language understanding    D) intelligent agents

(7) Eliminating duplicate data is typically a part of the data preprocessing step known as:

A) Data Consolidation    B) Data Cleaning    C) Data Transformation    D) Data Reduction

(8) Understanding customers better, which has contributed to the success of Amazon and others, primarily comes from:

- A) collecting data about customers and transactions.
- B) developing a philosophy that is data analytics-centric.
- C) analyzing the vast data amounts routinely collected.
- D) asking the customers what they want.

(9) Which of the following applications is likely to derive the least benefit from text mining?

- A) patients' medical files    B) patent description files    C) sales transaction files    D) customer comment files

(10) The type of analytics that aims to understand what is happening, predict future outcomes, and make decisions to optimize performance is known as:

- A) descriptive    B) prescriptive    C) predictive    D) domain

## 2. Essay Questions

(1) In light of Gartner's recognition of 'data fabric' as an essential strategic technology for businesses in 2022:

- (a) Define 'data fabric' and elaborate on its significance in enhancing data management and integration across varied computing environments. Discuss its role in providing businesses with a competitive advantage in the contemporary, data-centric corporate landscape. 5%
- (b) Contrast 'data fabric' with 'data mesh' by examining their architectural frameworks, operational methodologies, and effects on data governance and organizational agility. Highlight the principal distinctions and consider how each approach shapes an organization's decision-making processes and operational efficiency. 10%

(2) Generative AI (GAI) and Large Language Models (LLMs) are transforming business intelligence and decision-making processes, offering unparalleled insights and capabilities. In this rapidly evolving domain, Retrieval Augmented Generation (RAG) and Knowledge Graphs (KG) stand out as key methodologies, each bringing distinct strengths to the management and interpretation of complex business data.

- (a) Define RAG and discuss its role in enhancing the functionality of LLMs and GAI within the sphere of business intelligence and decision support. Explore how the fusion of RAG's retrieval and generative methods not only increases the efficiency and precision of LLMs and GAI but also paves the way for more nuanced and informed decision-making in business contexts. 5%
- (b) Analyze how RAG's processes can contribute to the enrichment of KG content, and in turn, how KGs can refine the accuracy and contextual relevance of RAG. Assess the synergistic effect of this interaction and its implications for advancing the tools used in business decision-making. 10%

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**B、Short Answer Questions:**

B1. Briefly introduce what “prompt engineering” is and what the abilities that a “prompt engineer” may have in order to do their jobs well. (10%)

B2. Please answer the following three questions associated with Non-Fungible Tokens (NFTs).

- (1) What is an NFT? (3 %)
- (2) How do NFT work (e.g., what the processes are and what the technologies that support NFTs are)? (7%)
- (3) Offer an example of the use of NFTs. (5%)

B3. Briefly describe what the network of “vehicle-to-everything” (V2X) is, what primary communication protocols it uses, and what benefits it can offer to the society. (10%)

B4. Please fill in the blanks in the following sentences: (15%)

- (1) A typical module of \_\_\_\_\_ that most customer relationship system (CRM) packages have is used to help companies identify potential buyers of their products and provide their customers with personalized purchasing recommendations.
- (2) A \_\_\_\_\_ is a software tool that malicious hackers may use to take control of personal and/or corporate data stored on various computing devices or even hijack the computing devices in order to extort money or other valuable assets from the victims.
- (3) The primary key of a table in an electronic database that records information about the ordering items of customer orders, including order\_ID, product\_ID, and ordered\_quantity, is \_\_\_\_\_.
- (4) The purpose of developing a \_\_\_\_\_ class when designing an information system (IS) is to use it to bridge the boundary classes and the entity classes in order to separate the view layer from the domain layer of the IS.
- (5) From an object-oriented perspective, the relationship between a personal computer and its central processing unit is an example of \_\_\_\_\_.