

**(I) Please define the following terms: (16%)**

- 1、Virtual Reality Modeling Language (VRML)[4%]
- 2、Wisdom of Crowds[4%]
- 3、Churn rate[4%]
- 4、Social shopping[4%]

**(II) Short Answer (34%)**

1. Explain how text mining and web mining differ from conventional data mining?  
[4%]
2. Describe how partner relationship management (PRM) and employee relationship management (ERM) are related to custom relationship management (CRM)? [6%]  
Distinguish between operational and analytical CRM? [4%]
3. Define case-based reasoning, and explain how it differs from an expert system?  
[8%]
4. Define and describe fuzzy logic, genetic algorithms, and intelligent agents? [6%]  
Explain how each works and the kinds of problems for which each is suited? [6%]

**(III) Essay: (50%)**

1. What is Cloud Computing? Describe its challenges and opportunities. (25%)
2. What is Service Oriented Architecture? Describe the architecture and explain a practical example of SOA. (25%)