考　試　科　目	管理資訊系統	所　別	資訊管理學系/資管組	考　試　時　間	2 月 28 日（六）第 三 節

I. True/False (15%): Write <u>True</u> or <u>False</u> to answer each question. Note: T, t, F, f are not acceptable answers.

1. Although open data is provided by the government, firms still need to pay for copyright if they build applications based on the data for profit.

2. A firm requiring a lot of data storage can benefit from cloud computing

3. When browsing a database, 30 courses listed in the Courses File means there are 30 entities

4. In an IT consultant firm, ex. IBM and Gartner, the most important asset of the firm is consultants' experiences and knowledge. In order to fully utilize the valuable asset, enterprise information portal is a possible solution.

5. Most servers run at just 15-20 percent of capacity. Virtualization can boost server utilization rates by enabling a physical server to run several instances of operating systems. In other words, a physical server appears to users as multiple logical resources.

II. Multiple Choice (15%): Write the <u>Capital letter ONLY</u> that represents the best answer to the questions below.

1. What is the most common reason for failure of large IT projects? Choose <u>the best answer</u>
   A. user resistance and rigid organizational structures and processes
   B. user requirements and expected service levels are not specified clearly
   C. poor project management

2. NCCU is assigned with a class B IP address: 140.119. The school then gives different network segments to different departments. For example, 140.119.1.x/24 is assigned to the finance department and 140.119.2.x/24 is assigned to the accounting department. The TA in the finance department sends an email to the TA in the accounting department. We use a router to connect the two network segments. According to the TCP/IP model, which two layers are related to the tasks performed at the router?
   A. Application and Internet
   B. Application and Transport
   C. Internet and Network Interface
   D. Transport and Network Interface

3. What is the key idea of Big Data?
   A. massive amounts of data
   B. unstructured data not suitable for relational database
   C. business intelligence

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4. O2O is an emerging trend of e-commerce. 17Life.com is one service provider built on the new trend, which recommends stores and sells discounted vouchers online. Customers then use the vouchers to shop in stores, e.g. restaurants. Which of the following key features of e-commerce best explained the motivation that physical stores participate in the O2O channel like 17Life.com?

A. provide access to customers

B. discover more about customers

C. reduce information asymmetry

5. Kraft Foods is a renowned food manufacturer. The company applies SAP ERP to keep track of production, inventory and sales. In 2012, the firm introduced SAP BusinssObjects Explorer to better capture trends and patterns from historical data. What is/are underlying technology(ies) of the description above? ? Choose the best answer

A. database and data warehouse

B. business intelligence

C. enterprise application

III. Essay Questions (70%)

1. Enterprise applications refer to information systems executing business processes across functional areas & all levels of management, such as ERP, SCM and KMS. The following questions are related the role and the usage of enterprise applications.-30%

(a) IDC Manufacturing Insights recently conducted a worldwide survey over 460 manufacturing enterprises. One key finding of the survey is related to the role of ERP. For most manufacturers, ERP is the essential system to run their business and our respondents indicate an inability to operate without an ERP system in place. However, when it comes to how ERP contributes to delivering a superior customer experience, firms with 100 – 1000 employees indicate that their ERP have limited, little or no contribution towards the delivery of a good customer experience. The opposite holds true for larger companies with more than 5000 employees. Those firms indicate that their ERP is a vital platform for delivering a good customer experience as it connects the back and front office operations. Can you provide the rationale to explain the different opinions between two types of firms?-12%

(b) According to the survey about firms' concerns on enterprise applications like ERP (Forrest Research, 2009), high cost of ownership, including installations of on-premises packaged software and following maintenance costs, top the list of concerns. Cloud computing is one possible solution on this issue especially for small and medium firms. Working as an IT consultant, you are invited to provide at least one alternative (other than cloud computing) for small and medium firms. Please supply with a brief description of the option and the comparison with enterprise applications. An answer without a short explanation will be given zero point.-12%

(c) When the IT department suggests investing in enterprise applications, what is the key step that IT department should apply to convince top executives?-6%

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2. In the job-searching market, customer base is critical to a firm operating a matching platform. However, customers can easily use the Internet to find various products (that is, job opening) that fits their preferences. For example, 104.com and 1111.com are major platforms providing multiple search criteria to help customers find job openings. One way to enter a market is to analyze the business environment of the market. According to the above description, can you explain how 66K 工作網 enter the job-searching market using Porter's competitive force model, and how 66K 工作網 implement the competitive strategies using information systems?-12%

Competitive force		Competitive strategy
Competitors		Low cost leadership
Customer influence	➡	Product differentiation
Supplier influence		Focus on market niche
Substitute of products		Strengthening customer intimacy
Market entrants		Strengthening supplier intimacy

3. You have acquired approval from the strategic planning group for the proposal you turned in. You are now going into planning stage:-15%

Task	Description	Immediate Predecessors	Duration (wks)	Minimum Required Time	Unit cost to shorten a week
A	Project preparation	--	2	1	8K
B	Requirement collection	A	5	4	10K
C	User interface review	A	4	3	9K
D	Specification for requirement	B, C	4	2	11K
E	Specification for data model	C	3	1	9K
F	System development	D, E	10	8	12K
G	Testing	F	4	3	10K

(a) The above are required activities and activity duration of the project. The manager would like to use PERT chart to visualize and monitor the project schedule. He also wants to know the critical path so that he can adjust schedule if necessary. What is the slack of C? What is the critical path (show your calculation)?-8%

(b) End users may be reluctant to spend time communicating their true requirements with the IT team. Consequently, when reviewing user interface with end users (activity C), IT team is likely to spend additional time finding out true requirements of end users. The impact of the risk will cause additional 3 weeks for project completion. What is the action plan would you put in the document to ensure the project finished on time when the activity C was delayed? Please provide the rationale and the answer.-7%

備　　註	一、作答於試題上者，不予計分。 二、試題請隨卷繳交。

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4. According to an article on iThome, Trend Micro (趨勢科技) provides the web reputation service to help subscribes (individuals & firms) filter webpages and prevent them from virus infection. Trend Micro monitors 163 billion websites, and on average, re-check and analyze 47 million webpages per day. Trend Micro faces two problems: (1) massive amounts of data are required to processes per day; (2) research teams which have different expertise are distributed in U.S., Japan and Taiwan. When experts in different locations are required, Trend Micro has to transmit data for analysis across countries. The transmission is expensive and time-consuming. Trend Micro adopts cloud computing to address the two issues. Please explain the underlying technology that Trend Micro employs to implement cloud computing, and how the technology address the two problems mentioned above.-13%

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