THE HONG KONG POLYTECHNIC UNIVERSITY

DEPARTMENT OF COMPUTING

EXAMINATION

Course : MScIS (Outpost) (61030)

Subject : COMP5138 Services Science Management

Group : 206

Session : 2010 / 2011 Semester II

Date : 15 May 2011 Time : 09:00-13:00

Time Allowed: 4 Hours Subject Lecturer: Eric Chu / Franklin Leung

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This question paper has ___3___ pages.

Instructions to Candidates:

This is an open book examination.
There are totally 4 questions.
You have to answer ALL FOUR questions. Please provide all your answers in the answer book.

Do not turn this page until you are told to do so!

Question 1 (25 marks)

1.1 Describe the main differences between service and product and give examples along with the explanations. (10%)
1.2 In terms of the services triangle, what are the implications to different management functions over a service organization? (8%)
1.3 What could be the strategic role of IT management along different functional units? (7%)

Question 2 (25 marks)

2.1 Briefly describe the provider gaps under the Gaps Model of Service Quality and discuss how each of the gaps could help to improve service quality. (10%)
2.2 Describe the function of queues in managing customer demand and explain how queuing systems could fit the Gaps Model of Service Quality. (5%)
2.3 Explain some of the design considerations that would help to improve the effectiveness of queues and give examples along with the explanations. (10%)

Question 3 (25 marks)

3.1 Elaborate the main differences between ITIL (Information Technology Infrastructure Library) Version 2 and Version 3. (6%)

3.2 With respect to ITIL framework,

a. Distinguish Service Level Agreement, Operational Level Agreement and Underpinning Contract. (4%)
b. Explain and illustrate with a diagram on the relationship between incident management, problem management and change management. (8%)
c. Distinguish availability, reliability, and maintainability. Illustrate with an example. (7%)

Question 4 (25 marks)

4.1 For the issues listed below,

I. Classify them with respect to the four ITIL Service Management Processes: Service strategy, service design, service operation, service transition .

II. Further indicate the classified sub-processes such as incident management, problem management, availability management, change management etc.

III. Describe briefly the recommended actions to address the issues

List of issues:

a. Some systems turn out to have slow performance sometimes. Once a system begins to slow down, usually it becomes slower and slower until the users complain to help desk. However, by the time the users have reported the problem, the problem has already become very serious and IT support staff have to react immediately for fire-fighting

b. The mainframe computer is used by a majority of the users and its component availability is 99.9%. However, the users voice out that , according to their own experience, the overall service availability when accessing the mainframe computer should be much lower than 99.9%.

c. An engineer has access to production system and can make changes whenever necessary. The engineer records all changes in a log.

d. All the computer asset and configuration information are recorded in an Excel spreadsheet. Any engineers making any changes to configuration or install new computer systems are required to inform the administrator of such changes. However, occasionally, it is found that the information recorded in the spreadsheet is not accurate.

e. The service desk staff assigns a priority to reported incidents based on the time period the incident is demanded by the user to be resolved (for example, the highest priority is assigned to those cases which the user demands to be resolved within one hour).

f. Heads of business units complain that some of their projects are not placed under higher priority as they have requested. The Head of IT department explains that , since there are limited resources within the IT department, they are forced to prioritize the projects according to the request submission date in case both projects are of the same priority.

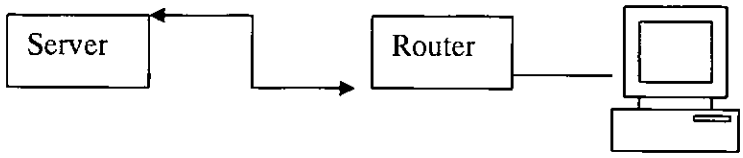
g. A project is outsourced to an external vendor. As the project is completed, it is found that internal staff does not have the required skills to perform ongoing system maintenance.

h. The capacity manager in the IT department projects the computing power (CPU) requirement in the coming year using a linear projection based on the CPU usage level in the past three years.

i. It is found that some departments in the company are using unauthorized software (that is, software without the required license). The department staff explains that they are not aware the software in use does not have proper licenses acquired.

(18% for all nine sub-items, 2% for each sub-item)

4.2 Referring to the scenario below with the availability of individual components expressed in percentage,



97% (Server) 99% (WAN network) 95% (Router) workstation

If the user requires >98% overall availability and the additional costs for setting high availability configuration (i.e primary with one additional standby machine) are listed as below:

High availability configuration for server:	100,000
High availability configuration for network:	150,000
High availability configuration for router:	50,000

What is the most cost effective configuration meeting the required availability requirement and what is the cost to set up such configuration? Show your calculations to support your answers. (7%)

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