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# UNIVERSITI SAINS MALAYSIA

First Semester Examination  
Academic Session 2010/2011

November 2010

**EBB 513/3 – Quality Management**

Duration : 3 hours

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Please ensure that this examination paper contains SEVEN printed pages before you begin the examination.

This paper consists of SEVEN questions.

**Instruction:** Answer **FIVE** questions. If candidate answers more than five questions only the first five questions answered in the answer script would be examined.

The answers to all questions must start on a new page.

All questions must be answered in English.

1. All organizations are under pressure to demonstrate management systems that satisfy the various demands of stakeholders. Quality, environment, IT security and legislation, health and safety, the list of aspects and the requirements your business has to comply with, seems to go on and on.

Traditionally, organizations have focused on establishing management systems that demonstrate compliance with each specific requirement, sometimes in isolation or even conflicting. However, in a perfect world, you should have one system that runs your organization and addresses all of its objectives at once, be the quality, environment or any other aspect. It's a challenge to satisfy the needs of several management systems while running a business. But achieving this can be beneficial to your organization's efficiency and effectiveness, as well as reducing the cost and disruption of external audits. Therefore, an integrated management system (IMS) is highly recommended. IMS is a management system which integrates all components of a business into one coherent system so as to enable the achievement of its purpose and mission. Discuss in details about the IMS implementation.

(100 marks)

2. Mr. Allan Cock, CEO of a mid-sized electronics manufacturing firm, decided more than a year ago to get his employees involved, as a way to improve work and enhance his company's competitiveness. He called his managers and supervisors together, explained his idea, and had suggestion boxes placed in all departments.

At first, the suggestion boxes filled to over-flowing. Supervisors emptied them once a week. Acted on any suggestions they thought had merit, and discarded the rest. After a couple of months, employee's suggestions dwindled down to one or two a month. Even worse, recent suggestion forms have contained derisive remarks about the company and its suggestion system.

Productivity has not improved, and morale is worse than before. Mr. Cock is at a loss over what to do. Employee involvement was supposed to help, not hurt.

The above example shows how the CEO of this company is trying to get his employees involved in the process of making the company more competitive. But his effort has gone into the drain. If you are given the same opportunity, what will you do? Discuss in detail about the concept of "involvement" and "empowerment", their relationship, and how they can be used to improve competitiveness.

(100 marks)

3. Benchmarking has become an increasingly popular tool among companies trying to become more competitive, striving for world-class performance. Benchmarking was brought to our awareness through Robert C. Camp's 1989 landmark book. The vast majority of the companies are actively engaged in benchmarking. Benchmarking is a part of the total quality process, and anyone involved in total quality should have a solid understanding of this subject. Explain in detail about the benefits and pitfalls of benchmarking. Also explain how any enterprise could make rational decisions concerning benchmarking, including whether or not to do it, and how to go about it.

(100 marks)

4. One of the tenets of total quality is management by facts. This is not in harmony with the ability to make snap decisions and come up with quick solutions to problems in the absence of input beyond intuition, gut feel, and experience. Management by facts requires that each decision, each solution to a problem, is based on relevant data and appropriate analysis. Once we get beyond the very small business, most decision points and problems will have many impacting factors, and the problems will remain obscure until valid data are studied and analyzed. Collecting and analyzing data can be very difficult. Discuss in detail about how the above mentioned task can be made easy enough for everyone. Explain with example(s), how their use will assure better decision making, and better solutions to problems, and even improvement of productivity and products and services.

(100 marks)

5. If you ask the typical manager to describe his or her biggest problem in today's workplace, the response will probably include one or more of the following:
- We spend all our time in meetings trying to resolve problems
  - We are constantly fighting problems, and that doesn't leave us to do our real jobs, such as planning, leading, and so forth
  - As soon as we put out one fire, another pops up
  - We've got more problems than we can handle, and it bogs us down

Based on the above statements or any other similar statements, problem solving and decision making are fundamental to total quality. On the other hand, good decisions will decrease the number of problems that occur. On the other hand, the workplace will never be completely problem-free.

Discuss in details about how to solve problems effectively, positively, and in ways that don't create additional problems. Also discuss about how you can become a better decision maker. Include also in your discussion about learning to make decisions and handle problems in ways that promote quality.

(100 marks)

6. Just in time (JIT) is the name given by the Toyota Production System developed by Taiichi Ohno. JIT is sometimes referred to as Lean Production Manufacturing. The term Focused Factory is sometimes applied to JIT production cell. If you encounter a production system called Demand Flow, or Demand Flow Technology, it is JIT with new label. JIT manufacturing has become a management philosophy that seeks to eliminate all forms of waste in manufacturing processes and their support activities. This has to apply not only to the JIT manufacturer but also to its suppliers if the systems is to eliminate all possible wastes. Those companies that have required their suppliers to do their warehousing clearly have not gotten the point. The supplier should not produce the material until the JIT manufacturer needs it. In that mode there is no warehousing and therefore no wasted resources for buildings, maintenance, people to care for the material spoilage, obsolescence, or other related problems. Explain in detail about the rational for JIT, relationship of JIT to TQM and Word-Class manufacturing, benefits of JIT, requirements of JIT and automation & JIT.

(100 marks)

7. The origin of what is called statistical process control (SPC) goes back to 1931 and Dr. Walter Shewhart's book "The economic control of quality of manufactured product". Dr. Shewhart, a Bell Laboratories statistician, was the first to recognize that industrial processes themselves could yield data, which, through the use of statistical methods, could signal that the process was in control or was being affected by special causes (causes beyond the natural, predictable variation). The control charts used today are based on Shewhart's work. These control charts are the very heart of SPC.

Many organizations have adopted SPC as preferred way of controlling manufacturing processes. Much of this has come about as a result of the quality quest by first-tier companies, making it necessary to require that their second-tier suppliers practice SPC. We have seen this ripple down to at least the fourth tier. Nowhere is this more evident than in the auto industry. But even beyond the mandate by corporate customers, more and more small companies are using SPC as part of their quality competitiveness initiatives.

SPC users have backed away from the shotgun approach, where every process, no matter how trivial or foolproof, had to have SPC chart.

Discuss in detail how SPC could help your company which is now suffering with great deficit.

(100 marks)