

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)

DEPARTMENT OF BUSINESS AND TECHNOLOGY MANAGEMENT

Semester Final Examination

Winter Semester, A. Y. 2022-2023

Course No. : BTM 4703

Time : 3 hours

Course Title : Quality Management

Full Marks : 150

Answer all 6 (six) questions. All questions carry equal marks. Marks of each question and corresponding CO and PO are written in the right margin with brackets.

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1. The process of making a batch of paint at Peter's Paint Products (PPP) paint factory consists of the following steps: First the correct amount of raw materials must be mixed in the proper sequence. The operator must follow specified safety instructions. After mixing, a sample is drawn and taken to a laboratory, where it is tested to ensure conformance to customer requirements and specifications. Next, the mixing tank is taken to a filling station and verified to be the correct one prior to filling individual cans of paint. The filled cans go to the packing department where labels are printed and applied to the cans. They are inspected to ensure that the labels are correct and the proper quantity was produced for the customer's order. The cans are packed in boxes and moved to shipping.
 - a) Develop a flowchart that maps out PPP's process 05 (CO3) (PO1)
 - b) Enrich the flowchart by adding detailed steps, which may not have been described in detail. 10 (CO2) (PO2)
 - c) Analyze if any opportunities exist for improving PPP's process. 10 (CO2) (PO2)
 2.
 - a) Describe the Quality Circle using appropriate examples. 05 (CO1) (PO2)
 - b) What approaches can you use to apply Deming's' Philosophy to improve quality in service industry? 10 (CO2) (PO2)
 - c) Discuss the meaning of "Quality is a race without a finish line" in the context of Motorola company. 10 (CO2) (PO1)
 3.
 - a) What did Philip Crosby mean by "Quality is free"? 05 (CO3) (PO4)
 - b) Analyze experiences in which your expectations were met, exceeded, or not met when you purchased goods or services using American Customer Satisfaction Index Model. How did your experience change your affection for the organization and/or its product? 20 (CO3) (PO2)
 4.
 - a) Design an instrument for evaluating the "process focus" for not for profit organization. For example, what characteristics would you look for in firms that have a strong process orientation? 05 (CO2) (PO2)

- b) The kaizen philosophy seeks to encourage suggestions, not to find excuses for failing to improve. Typical excuses are "If it's not broken, don't fix it," "I'm too busy to work on it," and "It's not in the budget." Think of at least five other excuses why People don't try to improve. 20 (CO3) (PO2)
5. Industry 4.0 (I4.0) has impacted various socio-economic fields which attracted both researchers and practitioners to investigate different impacts at different levels. Quality management is not an exception and the impact on its systems and practices has been discussed in the literature but not extensively. With smart manufacturing systems, various changes impact how the products are being manufactured. The wide range of technologies covered by I4.0 allowed the progress of the value chain, diminishing overall manufacturing lead times and improving the quality of all the stages of the production process as well as the final product, and therefore, the organizational performance. In this context, Quality 4.0 (Q4.0) stemmed from the I4.0 and it refers to the digitalization of quality. It deals with aligning the practices of quality management with the emergent capabilities of I4.0 to help drive companies toward achieving excellency. As stated by ASQ (2020), "Quality 4.0 is a term that references the future of quality and organizational excellence within the context of Industry 4.0".
- a) What is the impact of I4.0 on improving quality management practices and how can these digital technologies be leveraged to the benefit of quality management area? 10 (CO2) (PO2)
- b) What are the current challenges that hinder Q4.0 adoption? 15 (CO1) (PO1)
6. a) According to Harvard Business Review, a company with a highly developed culture of quality spends million dollar annually fixing mistakes than a company with a poorly developed one. 10 (CO1) (PO1)
- b) Melissa Clare works for a software company as a technical support representative. Her duties include answering the telephone, providing information to customers, and troubleshooting technical problems. Her supervisor told her to be courteous and not to rush callers. However, the supervisor also told her that she must answer an average of 15 calls per hour so that the department's account manager can meet his or her budget. Melissa comes home each day frustrated because the computer is slow in delivering information that she needs and sometimes provides the wrong information, causing her to search for the information in complex manuals. When she is pressed for time, she often cuts the call off prematurely or provides only the minimal information necessary. Explain which of the 14 Points (Deming's) might be violated. Drawing upon Deming's principles, outline a plan to improve this situation for her team. 15 (CO3) (PO2)