

# NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

## APPLIED PHYSICS DEPARTMENT

SPH 4201 – MANAGEMENT AND QUALITY ASSURANCE

BSc HONOURS PART IV: MAY 2013

DURATION: 3 HOURS

ANSWER **ALL** PARTS OF QUESTION **ONE** IN SECTION A AND ANY **THREE** QUESTIONS FROM SECTION B. SECTION A CARRIES 40 MARKS AND SECTION B CARRIES 60 MARKS.

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### SECTION A

1. (a) Define the following terms;
  - (i) quality , [2]
  - (ii) quality assurance, [3]
  - (iii) quality control. [3]
  
- (b)
  - (i) Explain the term organisation as applied in management. [2]
  - (ii) List three ways of structuring a business. [3]
  - (iii) Why must organisations emphasise on having a structure? [2]
  
- (c)
  - (i) Explain why it is important for Organisations to have ISO accreditation? [2]
  - (ii) “ISO 9 000 is not compulsory and so neither is business survival compulsory”. Discuss the above statement and justify the growing importance of quality. [10]
  
- (d) Explain what is meant by the term specialisation in the concept of organisational structure. [7]
  
- (e) Distinguish between “Quality of Design” and “Quality of Conformance”. [6]

### SECTION B

2. (a) List down the six steps of quality control process. [6]
  
- (b)
  - (i) “Process capability is different from batch performance”. Discuss. [6]
  - (ii) Explain with the aid of a diagram the process capability indices. In your diagram clearly show the lower and upper specification limits, target value and aim of process. [8]
  
3. (a) Phillip Crosby declared, “Quality is free”. With the aid of a diagram explain this statement. [10]
  
- (b) Including a diagram in your explanation describe how a company can ensure the worker builds quality into products. [6]
  
- (c) Describe the role of field service in both quality and service improvement. [4]

- 4 Discuss the eight quality management principles as defined in ISO 9000:2005 and ISO 9004:2000 and show how these principles can be used by senior management as a framework to guide their organisation towards improved performance. [20]
5. (a) Explain the relationship between corporate strategy, operations strategy, marketing strategy. [5]  
(b) Give four examples of transformations that can occur in a production system. [2]  
(c) Outline and explain the seven (7) basic steps to problem solving. [13]
6. (a) Discuss how Deming's 14 point plan may be applied to ensure that quality is everyone's responsibility. [16]  
(b) "Quality improvement is a process, not a program." Comment on the above statement. [4]

**END OF PAPER**