

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

APPLIED PHYSICS DEPARTMENT

SPH 4201 – QUALITY ASSURANCE

BSc HONOURS PART IV: MAY 2006

DURATION: 3 HOURS

ANSWER ALL QUESTIONS FROM SECTION A AND ANY THREE QUESTIONS FROM SECTION B. SECTION A CARRIES 40 MARKS WHILE SECTION B CARRIES 60 MARKS.

SECTION A

1.
 - (a) What do the terms quality, speed, dependability, flexibility and cost mean in the context of operations of an organisation. [5]
 - (b) Differentiate between quality assurance and quality control. [5]
 - (c) Use theories of management to explain how workers and management can interact and the impact of their interaction on quality and productivity. [10]
 - (d) Define the following terms in management:
 - (i) organisation,
 - (ii) financial strategy. [5]
 - (e) A good plan starts with a brain-storming session of all people involved with the project:
 - (i) Explain what is brainstorming and why it is important. [5]
 - (ii) State and explain the ingredient necessary for the successful execution of the plan. What are all possible forces or events that could hinder or destroy it? [10]

SECTION B

2. (a) Explain why organisations must emphasize quality. [5]
- (b) Discuss Juran and Deming's perspectives of quality. [15]

3. (a) Outline the role of marketing in the design of products and services. [10]
- (b) Discuss the strategy that an organisation can adopt to ensure that quality is everyone's responsibility. [10]

4. Discuss sampling plans that can be used by an organisation in its Inspection and Test Strategies. [20]

5. Outline and explain the basic seven steps to problem solving. [20]

6. (a) Explain how metrology tools can be used to verify the production process and to maintain a high level of quality of optical components. [10]
- (b) Describe the accreditation process of a physics lab and explain the implications. [10]

- END OF EXAMINATION -