



MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

SCHOOL OF BUSINESS AND ECONOMICS

DEPARTMENT OF BUSINESS ADMINISTRATION

FIFTH YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (MECHANICAL ENGINEERING)

EMM512: MANUFACTURING RESOURCE MANAGEMENT

DATE:

TIME:

INSTRUCTIONS

- This paper consists of two sections
- Section A is compulsory (30 marks)
- Answer any two questions from section B (Each 20 marks)

SECTION A (COMPULSORY)

QUESTION ONE (30 MARKS)

Read the case study below and answer the questions that follow:

INVENTORY MANAGEMENT STOCK-OUTS

Inadequate demand forecasting is one of the biggest challenges merchants today are facing. Nike's supply chain software implementation failure in 2001 is a cautionary tale for companies looking to implement complex systems without having the right resources in place. Nike installed its demand-planning software without sufficient testing, a necessary step for a company with such global and complex operations.

The result was excess stock of low selling shoes and not enough stock of the popular Air Jordans. According to a Nike press release, the mismatch directly resulted in a loss in sales of \$100 million. Nike's failure was a direct result of doing too much, too quickly.

Technology can be transformational to a business when executed correctly. However, there is a tendency for businesses to misuse technology, and to cut costs without consideration for the potential effect it can have on business processes.

- a) Explain **two** ideas that Nike should have considered to help in correctly predicting the demand for its product. (6 marks)
- b) Explain **six** software qualities that Nike should have considered before installing the software. (12 marks)
- c) Explain **four** inventory techniques that Nike could use to effectively manage its inventory (8 marks)
- d) Apart from the loss in sales by Nike, explain **two** other consequences that the company may have suffered due to its actions. (4 marks)

QUESTION TWO (20 MARKS)

Assume the demand for product X is 30 units. Each of Unit X requires three units of A and two of B. A requires one C, one D and three Es. Each B requires one E and one F. Each F requires three Gs and two Cs. Thus, the demand for A, B, C, D, E, F and G is completely dependent on the demand for X.

- a) From the above information, construct a Bill-of-Material (BOM) or Product Structure Tree for the related inventory requirements. (10 marks)
- b) From the Product Structure Tree, establish how many units of
 - i) A
 - ii) B
 - iii) C
 - iv) D
 - v) E
 - vi) F
 - vii) G will be required to produce 30 units of product X show (9.5 marks)
- c) Show your workings of the above. (0.5 mark)

QUESTION THREE (20 MARKS)

- a) Describe **five** tests carried out on a potential employee before an invitation to the employment interview. (10 marks)
- b) Explain the procedures involved in the receiving section of storekeeping process. (10 marks)

QUESTION FOUR (20 MARKS)

- a) Explain **five** measures that an organization can take to reduce its costs. (10 marks)
- b) Explain **five** reasons why manpower planning is essential in any organization (10 marks)

QUESTION FIVE (20 MARKS)

- a) The recovery of debts of business can be frustrating, time consuming and often unsuccessful. Explain **five** procedures that can be put in place to enable early identification of bad debts at the order stage. (10 marks)
- b)
 - i) Outline **six** assumptions of McGregor's Theory six (6x1)
 - ii) Explain four approaches that the management can use in dealing with workers falling under Theory X (4x1)