

1. (a) An operations manager in a manufacturing firm is responsible for the creation of products and services.
Highlight **five** types of resources that are required for the creation of such products and services. (10 marks)
- (b) Outline **five** techniques that an operations manager may use in developing new products for a firm. (10 marks)
2. (a) Outline **five** aspects of operations that an operations manager should cover when setting up and running a transformations process. (10 marks)
- (b) As an expert in operations management explain the role of the purchasing function in design and development of new products in a manufacturing firm. (10 marks)
3. (a) Explain **six** conditions that a manufacturing firm should fulfil for effective implementation of Just-In-Time technique in its operations. (12 marks)
- (b) Rangers Company Limited has been using the batch production system in its operations.
Explain **four** limitations of using such a system in its operations. (8 marks)
4. (a) Explain **five** factors that an operations manager should consider in the choice of a production system to use in an enterprise. (10 marks)
- (b) As an operations manager in a manufacturing firm, highlight **five** types of costs that are involved in plant and equipment maintenance. (10 marks)
5. (a) Assume that an annual demand for a cement manufacturing company is expected as follows:

Unit demanded: 8,000 10,000 15,000 20,000

Probability 0.5 0.2 0.2 0.1

The existing manufacturing facility has annual fixed operating costs of Ksh. 200,000.

Variable manufacturing costs are Ksh.7.75 per unit at 8,000 units of output
Ksh.5.00 at 10,000 units of output, Ksh.5.33 at 15,000 units of output and
Ksh.7.42 at the 20,000 units of output level.

An expanded facility under consideration would require Ksh.250,000 fixed operating costs annually. Variable costs would average as follows:

Ksh. 9.40 at the level of 8,000 units

Ksh. 5.20 at the level of 10,000 units

Ksh. 3.80 at the level of 15,000 units

Ksh. 4.90 at the level of 20,000 units

Use the information given to determine the size of the facility the company should choose in order to maximise its net earnings. (12 marks)

- (b) Outline the role of the purchasing function in plant and equipment maintenance and repair. (8 marks)

- 6. (a) Company 'AB' Limited is in the process of installing a flexible manufacturing system (FMS)
Outline **five** operational features of such a system. (10 marks)

- (b) Explain **five** reasons for adopting a straight line flow layout for production facilities in a manufacturing firm. (10 marks)

- 7. (a) Highlight **five** benefits that may accrue to an organisation from benchmarking its operations with those of its competitors in the market. (10 marks)

- (b) As an expert in operations management, explain the circumstances under which the materials requirement planning (MRPI) technique may be applied in a manufacturing firm. (10 marks)