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1. (a) Explain the importance of operations management to an enterprise.

(10 marks)

(b) A small enterprise has 5 employees and serves 500 customers per week. Each employee works 40 hours per week. The enterprise has a total wage bill of Ksh. 40,000 and a total overhead expenses of Ksh. 20,000 per week.

Determine the enterprise's:

(i) single-factor labour productivity;
(ii) multi factor productivity.

(10 marks)

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2. (a) The operations manager of Kendo Manufacturers intends to develop a new product. Advise him on the steps he should follow in executing his intentions.

(10 marks)

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(b) Benchmarking is a strategy for stimulating creativity in order to achieve improved business operations. Describe the benchmarking process. (10 marks)

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3. The following are the preventive maintenance activities that Cement Manufacturers Limited follows in its operations.

Activity	Preceding	Duration (weeks)	Estimated Cost (Ksh. '000)	Manpower per week
A	-	10	50	4
B	-	7	45	6
C	-	5	68	3
D	A	8	75	5
E	A, B, C	9	35	7
F	A, B, C	6	40	8
G	C	8	70	6
H	D, E	11	56	3
I	F, G	5	36	5

(i) Draw a Gantt chart to illustrate the sequence of the activities. (6 marks)

(ii) Using the chart in (i) above, determine:

I. the duration that the company takes in carrying out the preventive maintenance.;

II. the maximum manpower requirement for preventive maintenance. (6 marks)

(iii) Given that the company above pays Ksh. 3,000 per manweek and incurs miscellaneous costs amounting to Ksh. 50,000 per week, determine the total cost of preventive maintenance. (8 marks)

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4. (a) The operations manager of Kenya Manufacturers has a adopted a process layout at the company's production facility. Highlight the advantages that the company may realise from this layout. (8 marks)

(b) Five product designs are waiting to be processed at Apex Fabricators. The jobs were alphabetically assigned a letter in the order in which they arrived. The work processing times and due dates are as follows:

Job	Job Work Processing time (Days)	Job Due Date (Days)
A	6	8
B	2	6
C	8	18
D	3	15
E	9	23

Using the First Come-First Served as the priority rule for scheduling and sequencing jobs, determine:

(i) average completion time;
(ii) utilisation;
(iii) average number of jobs in the system.

(12 marks)

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5. (a) Explain the benefits that an organization may derive from adopting a batch production system. (10 marks)

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(b) The management of Goodwork Limited intends to change from the current method of design for their products to the use of Computer Aided Design (CAD). Explain the benefits that the company will enjoy as a result of the anticipated change.

(10 marks)

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6. (a) Quickwork Manufacturer's uses the simple average cost method to price materials issued from store to production department. Outline the advantages of using such a method of prizing the materials. (10 marks)

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(b) Pemba Manufacturing Limited is in the process of locating a paper manufacturing plant. Advise the management on the factors to consider in locating the plant.

(10 marks)

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7. (a) Tamu Bakers is in the business of bread production. The bakery has an effective capacity of 175,000 loaves of bread per week. The production line operates 7 days per week and has three 8-hour shifts per day. The product line was designed to process bread at a rate of 1,200 loaves per hour. Last week, the facility produced 148,000 loaves of bread.

(i) Determine:

I. the design capacity;
II. utilization;
III. efficiency of the plant.

(ii) Comment of the effectiveness of the plant design.

(10 marks)

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(b) The operations manager of Aseko Manufacturers intends to introduce a routine maintenance programme in the company. Advise the manager on the steps to follow to set up the programme. (10 marks)