UNIVERSITY OF KELANIYA - SRI LANKA

Faculty of Commerce & Management Studies

Bachelor of Commerce (Special) Degree Examination (External) - 2014

Year II

November – 2017

BCOME 2065 – Operations Management

No. of Questions: Seven (07) **Time: 03 hours**

Answer any five (05) questions.

---

(01).

a). Briefly explain the different decisions taken by the operations manager in managing operations in an organization.

(05 marks)

b). Explain how operations function would interact with other business functions in an organization.

(05 marks)

c). Differentiate between core services and value added services using suitable examples.

(05 marks)

d). Explain how manufacturing organizations differ from service providing organizations.

(05 marks)
(Total 20 marks)

(02).

a). Describe the relationship between operations strategy and corporate strategy in an organization.

(04 marks)

b). List down the competitive priorities and explain the importance of them.

(04 marks)

c). Briefly explain the important perspectives which are considered in formulating operations strategies in an organization.

(04 marks)

d). A Shoe manufacturing company has provided the following data for 2015 and 2016.

		2015	2016
Output	Sales value of production	25000	30000
Input	Labour	12000	15000
	Raw materials	7000	13000
	Capital	8000	12000
	Other	3200	5800

Compute the total measure of productivity, labour productivity and multi-factor productivity measures for 2015 and 2016.

(08 marks)

(Total 20 marks)

(03).

a). Briefly explain the difference between single-stage process and multi-stage process.

(04 marks)

b). Motor vehicles manufacturing company undertakes its operation in a assembly line production process and works 8 hours per day. Average daily production is 500 motor vehicles. Intended tasks, preceding tasks and the respective time duration are given in the following table

Task	Preceding task	Time (in seconds)
A	-	50
B	-	21
C	A,B	40
D	B	70
E	C	12
F	C	20
G	D,E,F	71

1. Draw the precedence diagram.
2. Calculate the cycle time
3. Calculate the theoretical number of workstations.
4. What is the efficiency of the process?
5. If the demand has been increased by 30%, what would be the cycle time?

(16 marks)

(Total 20 marks)

(04).

a). Explain how an organization can minimize its inventory costs using a suitable graph.

(04 marks)

b). A grocery buys its tomatoes once a week. A box of tomatoes costs Rs.200 and sells at Rs.500. Any boxes remaining unsold at the end of the week are sold at Rs. 50. Observations show that past sales range from 16 to 20 boxes per week. Since the demand is constant, it is assumed that sales will continue at the same rate. Suppose that a study undertaken has showed the following results.

No. of boxes demanded	**No. of weeks**	**Probability**
16	04	0.08
17	10	0.20
18	12	0.24
19	15	0.30
20	09	0.18

Find how many boxes the grocery should sell in order to maximize the profits and calculate the profit.

(06 marks)

c). AA tools company experiences an annual demand of 25000 electric motors per year. Every time the company places an order to the manufacturer there is a fixed charge of Rs.1500 for a order. It costs Rs.3 to hold a motor for a year. Please note that cost per motor is Rs.500. Find;

i). EOQ

ii). Total annual cost

iii). Optimal no. of orders per year

iv). Optimal time between orders

v). If the lead time is 10 days calculate the re-order point.

(10 marks)

(Total 20 marks)

(05).

a). Briefly explain design capacity, effective capacity and actual capacity.

(06 marks)

b). The following information are related to the stationary manufacturing company.

Actual production last week = 90,000 books

Effective capacity = 100,000 books

Design capacity = 2000 books per hour

Company operates 7 days/week, 1 - 8 hour shifts

Efficiency of new line = 75%

Calculate the following.

i). Design capacity

ii). Efficiency

iii). Utilization

iv). Expected output of the new production line

(08 marks)

c). A department has a machine that works one eight-hour shift, 250 days a year, and has these figures for usage of a machine that is currently being considered:

Product	Annual demand	Standard processing time per unit (Hrs)
1	400	5
2	300	8
3	700	2

Determine the required number of machines.

(06 marks)
(Total 20 marks)

(06).

a). Briefly explain the quantitative and qualitative techniques in forecasting.

(05 marks)

b). The demand for a business over a ten year period is given in the table below.

Year	1	2	3	4	5	6	7	8	9	10
Demand	100	115	140	130	135	145	125	100	120	130

Assuming that $\alpha = .40$, find out the forecasted demand for 11^{th} year using exponential smoothing technique.

(10 marks)

c). The following table shows the actual and forecasted sales for 6-month time period.

Month	Actual Sales	Forecasted Sales
January	450	430
February	310	300
March	400	420
April	370	375
May	400	425
June	425	395

Determine the accuracy of the data series.

(05 marks)
(Total 20 marks)

(07). Write short notes on the following.

a). Productivity

b). Product design

c). Quality

d). Product layout

e). Transformation process

(04 marks each)

(Total 20 marks)