



MACHAKOS UNIVERSITY

University Examinations for 2016/2017 Academic Year

SCHOOL OF BUSINESS AND ECONOMICS

DEPARTMENT OF BUSINESS ADMINISTRATION

**FOURTH YEAR FIRST SEMESTER EXAMINATION FOR BACHELOR OF
COMMERCE**

BMS 401: PRODUCTION & OPERATIONS MANAGEMENT

DATE: 31/7/2017

TIME: 2:00 – 4:00 PM

INSTRUCTIONS

Answer question ONE and any other TWO questions

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Explain the circumstances under which Mass production may be preferred for use in a manufacturing plant. (5 marks)
- b) Describe the process that organizations may use when developing new products for the market. (5 marks)
- c) The capacity of the manufacturing unit can be expressed in number of ways as units of output per period. Explain six such ways. (5 marks)
- d) Highlight the advantages associated with the use of functional layout in a manufacturing plant. (5 marks)
- e) Assume that a new medical facility, Health-care, is to be located in Mbubach County. The location factors, weights, and scores (1 = poor, 5 = excellent) for two potential sites are shown in the following table. Which is the best location? (5 marks)

Sl. No.	Location factor	Weight	Scores	
			Location 1	Location 2
1.	Facility utilization	25	3	5
2.	Total patient km per month	25	4	3
3.	Average time per emergency trip	25	3	3
4.	Land and construction costs	15	1	2
5.	Employee preferences	10	5	3

- f) The Pareto analysis can be used to identify the problem in a number of forms. Highlight five such forms. (5 marks)

QUESTION TWO (20 MARKS)

- a) Select a company of your choice and explain the areas in which a company's Competitiveness may be enhanced by having an effective operations plan in place (10 marks)
- b) There are a number of areas in which an operations strategy may be broken into for effective planning. Explain five such areas. (10 marks)

QUESTION THREE (20 MARKS)

- a) Explain the distinctions between the three Qualitative Methods commonly used by organizations to forecast demand. (10 marks)
- b) A project has the following activities, precedence relationships, and activity durations:

Sr.no.	Activity Immediate	Predecessors	Activity Duration (weeks)
1.	A	-	3
2.	B	-	4
3.	C	-	3
4.	D	C	12
5.	E	B	5
6.	F	A	7
7.	G	E,F	3

- a) Draw a Gantt chart for the project (5 marks)
- b) Construct a CPM network for the project. (5 marks)
- c) Identify those activities comprising the critical path. (5 marks)
- d) What is the project's estimated duration? (5 marks)

QUESTION FOUR (20 MARKS)

- a) A company is faced with seven tasks that have to be processed through two work centers. Assume work center I works continuously and that they are using Johnson's rule. Data appear below in hours:

Task	Work center I	Work center II
A	2.58	3.47
B	1.66	5.84
C	2.71	2.41
D	5.52	1.99
E	3.38	7.62
F	5.22	1.73
G	2.89	1.11

- i. What is the sequence of tasks? (5 marks)
 - ii. What is the time in hours to complete all the tasks in both work centers? (5 marks)
- b) Explain the limitations which may lead multinational corporations to adopt virtual supply chains for their products. (10 marks)

QUESTION FIVE (20 MARKS)

- a) Xyz Company Limited has experienced profitability reduction in the past five years due to demand variability. Advise the company on how to regain their profitability. (10 marks)
- b) Explain the challenges that an organization may face when adopting Early Supplier Involvement when developing new products. (10 marks)