



MACHAKOS UNIVERSITY

University Examinations for 2016/2017 Academic Year

SCHOOL OF BUSINESS AND ECONOMICS (MLOLONGO CAMPUS)

DEPARTMENT OF BUSINESS ENTREPRENEURSHIP AND MANAGEMENT
SCIENCES

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR DEGREE IN
BACHELOR OF COMMERCE (PROCUREMENT AND SUPPLY CHAIN
MANAGEMENT OPTION)

BMS 401: PRODUCTION AND OPERATIONS MANAGEMENT

DATE: 30/5/2017

TIME: 11:00 – 1:00 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 five 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 Kiambu 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) Explain the areas in which a company's Competitiveness may be enhanced by having a an effective operations plan in place. (10 marks)
- b) There are many 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. (2.5 marks)
- b) Construct a CPM network for the project. (2.5 marks)
- c) Identify those activities comprising the critical path. (2.5 marks)
- d) What is the project's estimated duration? (2.5 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 REASONS which lead multinational corporations to adopt virtual supply chains for their products. (10 marks)

QUESTION FIVE (20 MARKS)

- a) Explain the short-term capacity strategies that manufacturing companies may use to manage demand variability. (10 marks)
- b) Explain the Benefits that an organization may derive from adopting Early Supplier Involvement (ESI) when developing new products. (10 marks)