## University of Kelaniya - Sri Lanka

### *Centre for Distance and Continuing Education*

### Faculty of Commerce & Management Studies

Bachelor of Business Management (General) Degree Third Examination (External) – 2012

June/ July - 2015

### BMGT E 3045/ BMG 302.2 – Operational Management

No of questions – 08                               Time: 03 Hours

Answer any five (05) questions.

(01)   a)     Explain the role and responsibilities of an operations manager within an organization.

                                                          (06 marks)

        b)     Explain the Development of historical evaluation of production management up to $21^{st}$ century.

                                                          (06 marks)

        c)     Show the systems aspects of production/ operations function, using a diagram.

                                                          (08 marks)

(02)   a)     Explain in detail about the qualitative and quantitative methods of forecasting?

                                                             (06 marks)

        b)     Briefly explain the criteria used in selecting the best forecasting methods?

                                                          (06 marks)

        c)     The average sales of cars for Sam Motors for the last five moths was 32 units. The average increase in car sales was 4 units per month. In the fifth month 35 units were sold. If $\alpha = 0.2$ and $\beta = 0.3$, what is the forecast for the sixth month.?

                                                             (08 marks)

                                                             (Total 20 marks)

(03) a) Describe the types of layout with suitable examples.

(06 marks)

b) What kind of layout is followed in the following kind of facilities?

(Illustrate with the help of some characteristics of the respective type of layout)

(i) An automobile repair shop

(ii) A Hospital

(iii) An automatic car wash.

(06 marks)

c) A company is setting up an assembly line for making prefabricated paneled doors. Following table gives the precedence and the time required for the tasks.

Tasks

| | Immediate predecessor | Time (Seconds) |
|---|---|---|
| A - Assemble frame | - | 20 |
| B - Insert moulding | A | 07 |
| C - Insert frame screws | B | 22 |
| D - Insert frame handle | B | 20 |
| E - Insert frame latch | D | 10 |
| F - Install panel | C | 15 |
| G - Cover frame screws | E,F | 16 |
| H - Pack door unit. | G | 08 |

(i) If the line works for 7 hours per day and the demand is 800 units per day, what is the cycle time?

(ii) Balance the line using Longest Operational Time (LOT)

(iii) What changes would you make for workstation if the demand fell to 750 units per day?

(08 marks)

(Total 20 marks)

(04) a) How does a good product design increase overall organizational efficiency? Explain.

(06 marks)

b) Using a product of your choice examine the content and purpose of the design process.

(06 marks)

c) What are the different kinds of analysis carried out in a a feasibility study for new products? Describe.

(08 marks)

(Total 20 marks)

(05) a) Describe the factors to be consider for automobile manufacturing plant location.

(06 marks)

b) (i) Distinguish between method study and time study.
(ii) Briefly explain the steps in method study.

(06 marks)

c) An 8 hours work measurement study in a plant reveals the following.

Units produced = 320

Idle time = 15%

Performance rating = 120%

Allowance = 12% of Normal time.

Determine the standard time per unit produced.

(08 marks)

(Total 20 marks)

(06) a) Define the term "capacity" and explain the differences between long - terms strategic and short - term operational capacity planning.

(06 marks)

b) How do you measure capacity?

(06 marks)

c) Suggest appropriate methods for managing and smoothing capacity.

(08 marks)

(Total 20 marks)

(07) a) (i) Define "quality control" and explain its role in the modern business environment.

(ii) What are the different methods of quality control?

(10 marks)

b) (i) What is the importance of operating characteristics curve in the selection of sampling plans?

(ii) Distinguish between producer's risk and consumer's risk.

(10 marks)

(Total 20 marks)

(08) a) Explain with an appropriate example, how a Materials Requirement Planning (MRP) system work?

(10 marks)

b) Describe the benefits and challenges associated with the implementation of an MRP system.

(10 marks)

(Total 20 marks)