



على الطالب أن يختار موضوع واحد فقط من الموضوعات التالية ليكتب فيها مقالة بحثية تتناول العناصر الأساسية لكل موضوع مع استخدام الأمثلة الرقمية كلما أمكن ذلك:

1- The term production/operations management relates to the management of systems or processes that create goods and/or provide services. These processes involve the planning, coordination, and execution of all activities that create goods and services. Discuss the topic in your report.

The report should encompass the following:

- Define the term *operations management*
- Identify the three major functional areas of organizations and describe how they interrelate
- Identify differences between production and service operations
- Summarize the two major aspects of process management
- Discuss and compare organization strategy and operations strategy, and explain why it is important to link the two
- Use a numerical example from your own to explain productivity

2- Capacity planning refers to the activities of the firm in determining the capacity of a plant or a facility in terms of equipment, machines, space, workers and processes based on the resource constraints of the facility. In other words, a major function of capacity planning is to match the capacity of the machine or facility with the demand for the products of the firm. Discuss the topic in your report. The report should encompass the following:

- Summarize the importance of capacity planning
- Discuss ways of defining and measuring capacity
- Describe the determinants of effective capacity
- Use a numerical example from your own to distinguish between efficiency and utilization
- Discuss the major considerations related to developing capacity alternatives
- Briefly describe approaches that are useful for evaluating capacity alternatives

3- As a result of increased global competition, a rapidly growing number of companies of all sizes are paying much more attention to issues involving quality and productivity. Many statistical

techniques are available to assist organizations in improving the quality of their products and services; therefore, quality control topic become critical issue for organizations' growth and sustainability. Discuss the topic in your report. The report should encompass the following:

- Definition of Quality Control
- What does inspection mean and where to inspect in the process
- List and briefly explain the elements in the control process
- Explain how control charts are used to monitor a process, and the concepts that underlie their use
- Use a numerical example from your own to calculate control limits (UCL and LCL) when standard deviation of the process is known and unknown.

4- A major component of aggregate planning is to plan aggregate production and inventory levels to achieve a desired level of customer service. In preparing the aggregate plan, a major consideration is to check the desired production plan against the estimated capacity. On the other hand, in determining the estimated capacity, we must take into account the expected demand and the resulting medium range production plan. Discuss the topic in your report. The report should encompass the following:

- Explain what aggregate planning is and how it is useful
- Identify the variables decision makers have to work with in aggregate planning and some of the possible strategies they can use
- Describe some of the graphical and quantitative techniques planners use
- Prepare aggregate plans and compute their costs
- Describe the master scheduling process and explain its importance

With my best wishes,

Dr. Reda Shaker Abdelkareem