

OMGT6213 Exam I - Copy D

Please complete the following exam. Read all instructions carefully and answer each question asked. Calculations are important but so are explanations and dialogue.

1. You are required to turn in this exam by the due date listed on the course syllabus. Late papers will not be accepted.
2. Your work should consist of:
 - a. A cover sheet with your name and the date.
 - b. A **1-PAGE** Executive Summary of your work including explanations, calculations, diagrams, etc. Please feel free to include as much detail as you think necessary but remember you have limited space.
 - c. Executive summaries are expected to be typewritten (i.e., MS-Word, WordPerfect). However, calculations can be handwritten if need be. Clarity and neatness are expected.
 - d. Please refer to the **website for further information regarding writing executive summaries**. You may use any font and spacing that is reasonable. i.e., 0.25-inch margins and font size 10 are at the low end of reasonable. Use **HEADERS** to break up your executive summary (e.g., INTRODUCTION, CONCLUSION, ETC.). Please spell-check your document. Remember you are presenting this to your boss.
 - e. Please attach all calculations, spreadsheets, diagrams, graphs, etc., to the back of the executive summary or in an Excel file and label the section Appendix A. If you are running short on space in your executive summary, you may reference pages in the Appendix. (This may come in handy for certain diagrams, graphs, etc.). It is vitally important that you link your work to the executive summary, i.e., **I will NOT go searching for answers, spell them out in your executive summary and show your work in the Appendix!!**
3. You will be graded on both your calculations and your presentation. Calculations will be weighted approximately 75% and presentation (i.e., the executive summary) will be weighted 25%. Just a reminder, if I can't read it or find it, I can't grade it.

A typical exam will have the following parts:

- a cover page with your name and date,
- your executive summary,
- an appendix cover page, and
- your appendix pages.

You may turn in both a Word file and an Excel file (the Excel file would most likely contain your Appendix material).

NOTE: I WANT ONLY 1 (ONE) EXECUTIVE SUMMARY THAT INCLUDES ALL EXAM PROBLEMS. DO NOT CREATE MORE THAN 1 (ONE) EXECUTIVE SUMMARY!! PLEASE EMAIL ME IF THIS IS NOT CLEAR.

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Crossover Chaos

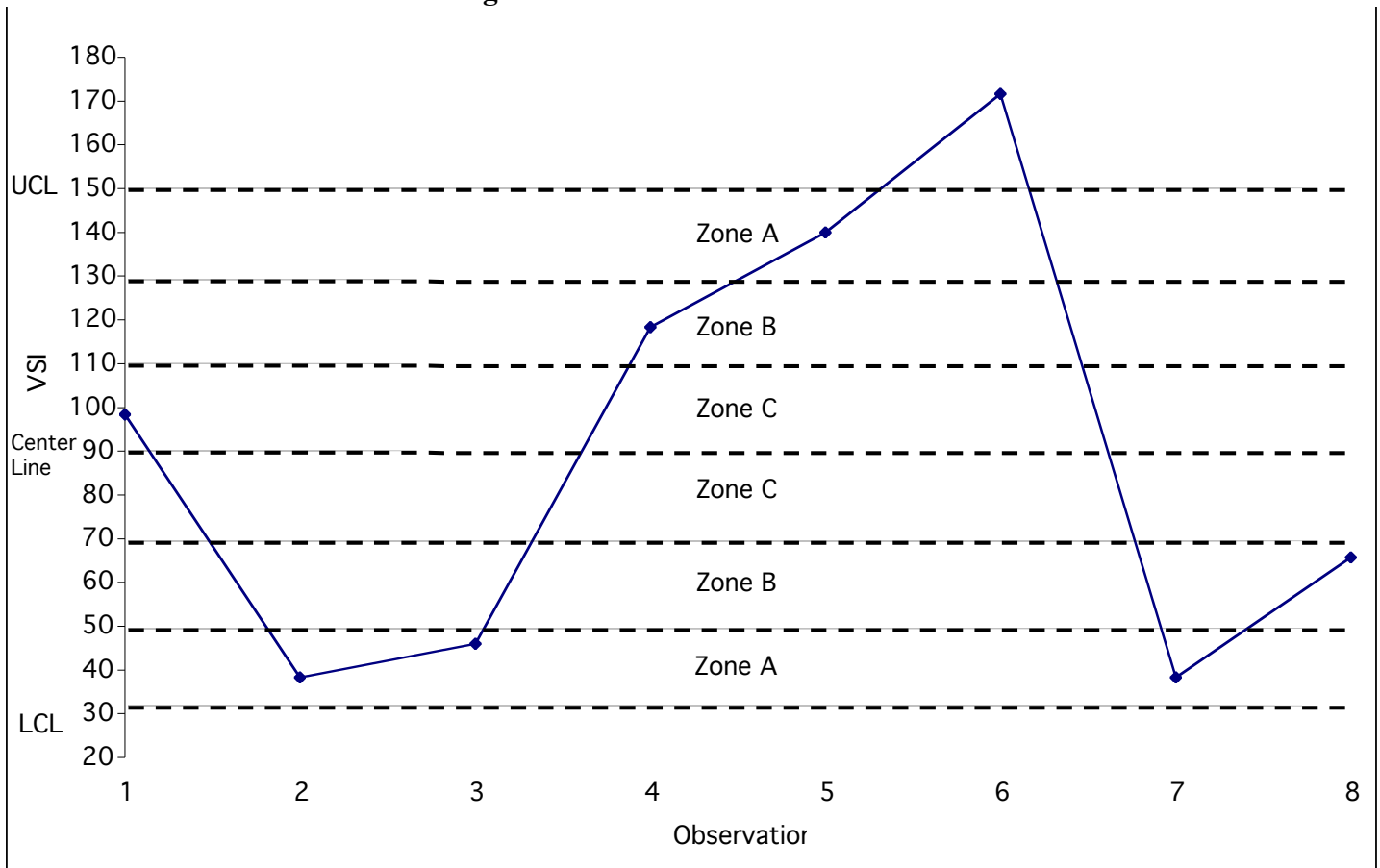
From time-to-time, outside testing services are used when Schlapfer Inc.'s testing center is overloaded. Jimmy Ahdoot, the Operations Manager, must make a decision on which of two testing centers is a better deal. Center 1 charges a flat fee of \$2,000 plus \$600 for every hour of testing done. Center 2 charges a much higher flat fee of \$10,000, but only charges \$20 for every hour of testing done. Jimmy has estimated that when outside testing services must be used, the testing center is overloaded, on average, by about 15 hours, give or take 4 hours. In general, Jimmy attempts to keep outside testing to a minimum and needs to decide on which outside service to go with. Help Jimmy understand the two plans, specifically, the trade-offs and risks involved (HINT: A cost/volume break-even analysis would be a good idea including a graph).

Quality Control Conundrum

The visibility standard index (VSI) is a measure of solder on a circuit board that is reported each day. The index ranges from 20 (not enough) to 180 (too much). Suppose that for eight days the VSI was observed three times each day. Based on this data an x-Bar chart was constructed and is displayed in Figure 1.1.

- Identify all out-of-control signals (high or low) that you find in the chart (NOTE: There could be multiple out-of-control signals).
- Explain what else an operations manager would need to completely understand if the VSI was in control or out of control?

Figure 1.1 VSI x-Bar Control Chart



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Line Balancing Ballyhoo

Tina's department needs to service 3,000 calls per 40-hour workweek (i.e., Tina's desired cycle time is 0.8 min). The process of servicing calls can be broken down into the six stations listed above. The precedence and time requirements for each element are as follows in Table 1.2. Tina needs to draw and label a precedence diagram for the service process. Finally, she needs to balance the line, calculate the efficiency of the line, and identify where and how much idle time exists.

Table 1.2 – Precedence and Time Requirements

Work Element	Predecessor	Performance Time (min)
A-Receive Call	-	0.1
B-Route Call	A	0.3
C-Tag Call	A	0.5
D-Start Form G	-	0.2
E-Fill in Box 22	C, D	0.6
F-Advise Call	B, E	0.4

Block Diagramming Dilemma

Clem is in the process of setting up facility space for a call-in service center for customers having difficulties with their cable modems. The service center has six stations. The current layout in the space is as shown in Figure 1.1. The anticipated flow of customer calls that will be passed between each station is given in Table 1.1. Clem must revise the current layout so non-adjacent loads are minimized and calls, paperwork, and employees move efficiently. Nonadjacent loads cost the company \$2 whereas, adjacent loads cost the company only \$1. Help Clem develop a more cost efficient layout for the process.

Figure 1.1 – Current Layout

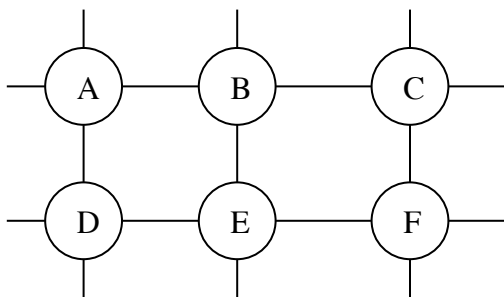


Table 1.1 – Load Summary

To From	Station					
Station	A	B	C	D	E	F
A		30	345	--	180	150
B			200	170	--	190
C				140	--	--
D					345	--
E						40
F						