

Exam in Lean production
TEK230

Date: May 25, 2010
Time: Morning session, 4h
Room: V

Information

Standard calculator and English dictionary allowed.

Carl and/or Ola will show up about 10.00.

Results can be reviewed 12:30-14:00 on June 17 at The Division for Logistics and Transportation.

Instructions for the exam and your answers:

- Your result on the exam will be added to your term paper result. Together, these results form your grade.
- The whole exam can give 50 points maximum.
- To get full points on a question, your answer should be comprehensive, well elaborated and ideally illustrated/exemplified, and *fairly* well written.
- Each answer could be on several pages, but ***not more than one answer on each page***

Tips for answering:

- Read and analyze – briefly – all questions before you start answering
- Plan the whole time according to your brief analysis of the exam
- Don't forget to plan for some extra time in the end
- If you "get stuck" on one question – go to the next one
- Think about your handwriting; make sure it's easy to read your answers
- You are allowed to use a pencil for your answers

Good luck!!!

Question 1 (12 points)

Please answer each one of the following questions short and concise.

- a. If you should do a Value Stream Map at a fast food restaurant. What are included in the total lead time in your Value Stream Map? (2p)
- b. The four P:s in Liker's model, what do they stand for? (2p)
- c. What does the takt time mean in Value Stream Maps? (2p)
- d. Give two examples, and explain them shortly, of problem solving tools within lean production. (3p)
- e. What is the andon system at Toyota (1p) and what is the idea behind it? (2p)

Question 2 (8 points)

Discuss the concept of "one-piece flow". What would you say are the main reasons to be striving for a one-piece flow through an assembly facility? What potential barriers could there be to implementing a successful one-piece flow in an assembly facility?

Question 3 (8 points)

- a. How can the standardized work be the foundation for continuous improvement and employee involvement? (4p)
- b. Describe how standardized work can be utilized in an office environment. Base your discussion out of the work of a lecturer at Chalmers (e.g. How can Carl's work as a lecturer be standardized). (4p)

Question 4 (8 points)

Toyota has described their way of working with two circles, *People* and *Continues Improvement*. You have been appointed as manager at a Supermarket (ICA or COOP doesn't matter). How can you utilize this model to achieve a highly motivated staff and become a learning organization?

Question 5 (14 points)

- a. Discuss five very important success factors in a Lean transformation. Motivate, each one, why they are on your list! (10p)
- b. How has the Lean concept evolved, from first mentioned in the 1990 until today? (4p)

leaders, focus on the whole value chain, planning, change culture, involving all staff, people coached (not doing the actual trans.)