UNIVERSITY OF SKÖVDE

School of Business

WRITTEN EXAMINATION

Course	**Logistics - Supply Chain Management and Sustainability G1F**
Sub-course	

Course code	**FÖ348G**	Credits for written examination	**5**
Date	**241213**	Examination time	**14:15 - 18:30**
Examination responsible	**Sandor Ujvari**		

Teachers concerned

Aid at the exam/appendices

Other

Instructions	
☐	Take a new sheet of paper for each teacher.
☐	Take a new sheet of paper when starting a new question.
☒	Write only on one side of the paper.
☒	Write your name and personal ID No. on all pages you hand in.
☒	Use page numbering.
☒	Don´t use a red pen.
☒	Mark answered questions with a cross on the cover sheet.

Grade points:

Each of three course goals is examined separately on the exam. For pass (E) at least 50% correct is required for each course goal or the whole exam is failed. If all course goals are answered at least 50% correct, the grade depends on the total score:

E: total score $\geq$ 50%;

D: total score $\geq$ 60%;

C: total score $\geq$ 70%;

B: total score $\geq$ 80%; and

A: total score $\geq$ 90%.

Examination results should be made public within 18 working days

Good luck!   Total number of pages: 4 including this one

Learning Objective:

explain the basic concepts of logistics as well as explain the impact of logistics on companies and organizations,

Question 1   **20p**

a) Describe how Operations Management and Logistics are related and explain with an example what can be considered as Operations Management but not Logistics (you can make one up/imagine one, or use Biocounter from the seminar with RealGame).

5p

b) What impact can logistics have on companies and organisations regarding their profitability? Describe how profitability is calculated using a formula and describe a dilemma where the choices that a company makes (you can make one up/imagine one) <u>does</u> increase cost and decrease revenue/sales.   5p

c) Describe the Logistics Strategy Drivers (from Harrison and van Hoek), explain what implications they can have for logistics strategies. Also describe three measures of how this can be measured and relate to a more efficient and a more responsive company.

5p

d) What difference is there between Logistics and Supply Chain Management, and what difference can a focus on logistics or on SCM make for a company?

5p

Learning Objective:

describe and analyze logistics processes within and between companies

Question 2   **20p**

a) During the lectures several concepts have been presented such as measuring emissions in Scope 1, 2, and 3 in the supply chain, Cradle-to-cradle. Use those concepts to explain the following quote from a company's sustainability report, also suggest which area to focus on for the company to reduce its greenhouse-gas-emissions:

"Cradle-to-gate is the part of the product life-cycle before transferred to the customer. In the Volvo Group's overall GHG emission estimation, the use-phase emissions make up over 95% of the total life-cycle emission and is therefore top priority for decarbonization. The cradle- to-gate makes up approximately 4% of which the main part is made up by GHG scope 3: purchased goods and services."

                                                       5p

b) Assume that a supply chain is changed in terms of:
- one transportation step is removed, a longer way including a terminal is removed and instead a direct transportation to the consumer is used
- one large production processing step is removed from the product producing company in the supply chain
- finished goods inventory levels become lower at the same company

What changes can be expected for the customer lead time (the time it takes for the end-customer to receive the product after order) and for the throughput time (the time it takes for the product to go through the supply chain? You can make assumptions on the P:D-ratio for responding to demand.

                                                       5p

c) Describe the type of "flows", or arrows that are often used in figures describing a supply chain from raw material to the end customer. How is the flow of information different in a highly Supply Chain Management-oriented supply chain compared with a supply chain where all companies are mostly focusing inwards to the own organisation?

                                                       5p

d) In production typically a series (a batch) of one type of products is produced followed by a setup/change-over. How does the size of a production batch (number of products of one type produced), the setup/change over time, and the flexibility of production (changing type of products produced) influence each other? Describe what effect very long setup times can have.

                                                       5p

Learning Objective:

understand the relationship between economic instruments and their relationship with inventory, and transports

Question 3   **20p**

a) What are the main motivations for using Just-In-Time and what can the problems be? Also describe if Just-In-Time can be used without increasing the number of transportations in general? Also, how can the environmental impact of transportations be reduced, and would it be possible to reach a fully sustainable transportation sector?

                                                   5p

b) How did the management of inventory levels influence your profit during the realgame seminar? How did your choice of transportation influence your profit. Describe and suggest how profits could be increased and greenhouse gas emissions be lowered in the future? You do not have to remember details, only the general aspects. (It is possible to use another made up company in your answer).   5p

c) Is it possible that a highly efficient high volume goods producing company has very long lead times (throughput times of material and goods) very low inventory levels, very high quality levels and still be long term profitable? Motivate your answer.

                                                   5p

d) What different levels are there in circular economy/closed-loop supply chain models regarding recirculation of material? Also give an example of how a goods producing company can limit waste in their processes? Motivate your answer.

                                                 5p