



STRATHMORE BUSINESS SCHOOL
BACHELOR OF SUPPLY CHAIN AND OPERATIONS MANAGEMENT
SPECIAL EXAMINATION
SCM 4106: SUPPLY CHAIN 4.0 AND INDUSTRIAL INTERNET OF THINGS

DATE: Fri, 19th April 2024

TIME: 10:30 – 12:30

INSTRUCTIONS

- 1) Answer QUESTION ONE and any other TWO QUESTIONS
- 2) Question one is compulsory and carries 30 marks
- 3) All other questions carry 15 marks each

QUESTION ONE

- a) All stages in the supply chain are potentially affected by increased digitization, which is what is applied in Supply Chain (SC) 4.0

Required:

Select **three** areas in the supply chain and explain the impact of at least two technologies in each of the three areas **(14 marks)**

- b) The theory of Dynamic Capabilities has been applied in various contexts. Christopher (2022) argues that this theory could be seen as the framework for SC 4.0 in its application.

Required:

- i). Explain the Dynamic Capabilities theory. **(3 marks)**
 - ii). Explain how it applies in SC 4.0 **(5 marks)**
- c) Explain any **three** hurdles to the implementation of SC 4.0 and for each suggest a way that it can be overcome. **(8 marks)**

QUESTION TWO

Artificial Intelligence(AI) is now almost pervasive in many disciplines and the Supply chain is one of the areas that it has been used extensively in. Developing AI has been done by combining many spheres of knowledge (referred as foundational roots).

Required:

- a) Explain any **four** foundational roots/disciplines of AI and how they contribute to AI. **(10 marks)**
- b) Explain how any of these foundational roots have been applied in the following areas of artificial intelligence:
- i). Speech understanding **(3 marks)**
 - ii). Smart factories **(2 marks)**

QUESTION THREE

It is argued that warehousing will in the future become the preserve of the Industrial 4.0 technologies combined, eliminating the use of human beings.
Discuss. **(15 marks)**

QUESTION FOUR

- a) One of the critical performance measures for an organization to ensure is achieved so it can thrive in the industry is the experiences customers have with the company and its products or services. It is argued that Supply Chain 4.0 can contribute to a great customer experience.
Required:
- i). Explain any **three** measures of good customer experience. **(5 marks)**
 - ii). How would any **two** of the technologies in SC 4.0 facilitate a high positive score in any two of the measures of good customer experience? **(5 marks)**
- b) It is argued that some sectors are more amenable to the adoption of Supply Chain 4.0 technologies than others. Evaluate the potential application of supply chain 4.0 technologies in the textile supply chain. **(5 marks)**

QUESTION FIVE

- a) Internet of Things (IoT) and Industrial Internet of Things (IIoT) is growing exponentially and becoming increasingly pervasive in the operations of organisations.
Required:
Explain any five drivers of IoT **(10 marks)**
- b) Big data is both a blessing and a curse in the supply chain. Discuss this statement based on your knowledge of supply chain 4.0 and its application in supply chains. **(5 marks)**