

Locomotive Limited (LL) is a train manufacturing organization operating in Asia, headquartered (HQ) in Hastings, New Zealand. LL manufactures engines for train, tram, Light Rail Transit (LRT) and Mass Rapid Transit (MRT) for the transportation industry in Asia. The organization has over 30 offices with a large Supply Chain (SC) network of both local and international suppliers, manufacturers and distributors. LL also provides consultancy and professional services to its clients such as train metering system, train piloting, natural gas system, petrol and diesel system inspection. The Management is now formulating new Information System (IS) strategies to ensure sustainable growth owing to stiff competition. One planned IS strategy is to further improve the delivery and training services. LL's Information Technology (IT) and Training & Development (T&D) department are currently working to implement a world class training system with Artificial Intelligence (AI) and Virtual Reality (VR) for a three-dimensional simulation of train pilot sessions.

1. As the IT Department Head who is planning for the new training system, describe **THREE (3)** IS strategy constraints that LL can face in implementing the new training system. For each IS strategy constraint explain clearly how it could affect the organization. (25 marks)

2. The new training system is very critical to LL business' goals, it has to be up and running every day of the week without disruptions. It will be implemented in the HQ which is located very close to Mount Ruapehu, a volcanic field. In your capacity as the IT Department Head, assess the following:
 - a) Based on the RM (Risk Management) Model, analyse the placement of the new training system in the correct quadrant clearly justifying your reasons for its placement. (10 marks)
 - b) Explain these technologies: Hash Coding and Steganography. Discuss how the technologies can be implemented in LL to mitigate any security risks. (20 marks)

3. A Disaster Recovery policy is critical in ensuring business continuity in the event of a disaster. Recommend **ONE (1)** Backup Location for LL with your justifications. (5 marks)

Total: 60 marks

Answer ALL questions based on the following Case Study

Moon Enterprise (ME) is a large mall operating in Germany. ME has a large Supply Chain (SC) network with local and international suppliers, manufacturers and distributors. The mall has cafes and restaurants for customers to shop and have meals. They were the first mall to introduce Augmented Reality (AR) through interactive mirrors to navigation inside the stores to transform and enhance the shopping experience for their customers. However, owing to the pandemic, they saw a reduction of customers which reduced their profits forcing them to cut down on their staff strength. The management has resorted to studying new business plans and strategies to ensure sustainable growth.

- a) ME has identified new products as part of their new business strategy. Describe **TWO (2)** First Mover advantages that ME can experience from this initiative. For each First Mover advantage explain clearly how it can serve to improve the organization's revenue.
(12 marks)
- b) Meeting customer requests is key in ME to keep customers satisfied. Analyse how Collaborative Planning, Forecasting and Replenishment can be implemented in ME with your clear justifications. Explain the meaning of Duties and Tariffs.
(12 marks)
- c) In addition to AR, ME's IT Department will implement the Internet of Things (IoT) to stay connected to its suppliers. Explain IoT and discuss how it can be implemented in ME to improve its operations.
(6 marks)
- d) A Disaster Recovery policy is critical in ensuring business continuity in the event of a disaster. Recommend **ONE (1)** Backup Location for ME with your justifications.
(5 marks)
- e) Computer Security is an essential aspect in all organizations to detect and prevent attacks. In safeguarding data, describe the **THREE (3)** Elements of Computer Security, and for each element provide an example of how a threat could be carried out in ME.
(15 marks)

Total: 50 marks