OT7.1 Robotics and 7.2 Types of Robots

In this theory task, you will learn about:

1. Robotics:

* definition of robots and robotics
* historical perspective of robotics
* the contribution of Asimov to the concept of robots, leading to the Laws of Robotics

1. Types of Robots

* industrial such as a welding arm
* domestic such as toys

# Key Learning Objectives:

1 - Knowledge and understanding of the effects of past, current and emerging information and software technologies on the individual and society

3 - Responsible and ethical attitude related to the use of information and software technology

Read text pages 282 – 287 of your textbook and then answer the following questions. You may need to research some answers using the Internet. Present your work as a well formatted Word document, making use of heading styles and page numbers.

**\*\*\*\*\*\*Correctly cite all reference material\*\*\*\*\***

# Elementary

1. Define each of the following terms:
   1. Robot
   2. Robotics
2. Modern robots have sensors to accept data from the environment. Intelligent robots have sensors to imitate human behaviour and thought processes. What sort of inputs would an intelligent robot have?
3. What should an intelligent robot be able to do?
4. What are some characteristics that a modern robot should have?

# Basic

**Elementary +**

1. Using your textbook for reference (page 282), briefly summarise the history of robots.
2. Choose a robot that has been portrayed on television or in a movie.
   1. Name the robot as well as the television or movie that it appears in.
   2. Include an image of the robot.
   3. What is the purpose of the robot?
   4. Briefly describe some of the sensors that this robot has.

The following clips may be useful:

**Lost in space:**

* <http://www.youtube.com/watch?v=VjH8pA46tLk&NR=1>

**Star Wars:**

* <http://www.youtube.com/watch?v=gJ2Fd1iqKyA>

**I, Robot:**

<https://www.youtube.com/watch?v=05bGPiyM4jg>

# Sound

**Basic +**

1. Research Isaac Asimov (1920 – 1992), including his Laws of Robotics.

# Competent

**Sound +**

1. Compare and contrast stationary and mobile robots, giving specific **examples** of what each type can do. Include images of the robots described.
2. Why are industrial robots sometimes preferred to human labour?

# Extensive

**Competent +**

1. Research a domestic robot e.g. Asimo or Kompai. Specifically, document your findings on:
   1. When the robot was first developed and by who
   2. What the robot can actually do (relate this to the sensors available)
   3. Include an image as well as a link to a relevant YouTube clip.