



DURBAN UNIVERSITY OF TECHNOLOGY
INYUVESI YASETHEKWINI YEZOBUCHWEPHESHE

FACULTY OF ACCOUNTING AND INFORMATICS
DEPARTMENT OF INFORMATION TECHNOLOGY

2023
YEAR END MAIN EXAMINATION

INSTRUCTIONAL PROGRAMME : Bachelor of ICT/Advanced Diploma in ICT

INSTRUCTIONAL OFFERING : *Machine Intelligence 3*

PAPER NUMBER : 1

SUBJECT CODE/S : MAIN301/MCHI301

DATE : 22 NOVEMBER 2023

DURATION : 3 HOURS

TIME : 14H00 - 17H00

TOTAL MARKS : 100

NUMBER OF PAGES : 11 (including cover sheet)

EXAMINER/S : MRS S HOOSEN

MODERATOR/S : MR L VORSTER

INSTRUCTIONS/REQUIREMENTS:-

1. Answer all questions in the answer book
2. Calculators are permitted
3. No notes will be permitted.

Do not turn the page until permission is given

QUESTION 1 [15 marks]

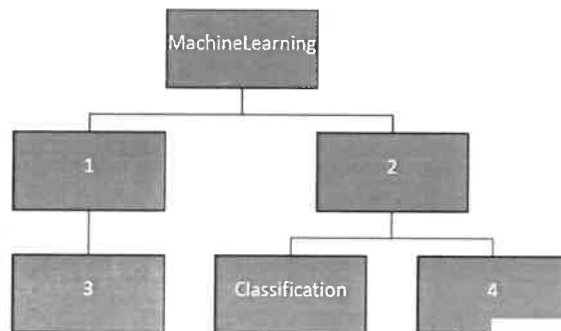
Write down the numbers 1.1 to 1.15 and next to each write down only the alphabet of the choice you have selected.

1.1 What type of learning needs to be applied to the following problem statement?

"You want to train a machine to help you predict how long it will take you to drive home from your workplace."

- A) Unsupervised Learning with Clustering
- B) Supervised Learning with Regression
- C) Supervised Learning with Classification
- D) Reinforcement Learning with Agents

1.2 The diagram below represents an overview of the types of machine learning. Study this diagram and then select the correct option by matching the numbers in the diagram with the corresponding type of learning.



- A) 1: Supervised; 2: Unsupervised; 3: Regression; 4: Clustering
- B) 1: Unsupervised; 2: Supervised; 3: Clustering; 4: Regression
- C) 1: Supervised; 2: Unsupervised; 3: Clustering; 4: Regression
- D) 1: Unsupervised; 2: Supervised; 3: Regression; 4: Clustering

1.3 What best describes the model function illustrated below?

