**Data Science**

**Week 6: Data-Driven Modelling**

**Required Assignment 6.6: Predictive Modelling**

**Instructions:**  
The table below provides data on the income of five customers and their age. This data is also represented graphically in Figure 1(a) below. Three prediction models consistent with the given data are shown in Figures 1(b), 1(c) and 1(d).

| **Table: The age-income dataset** | | |  | **Fig. 1(a): Graphical representation of the data in the table** |
| --- | --- | --- | --- | --- |
| **Customer ID** | **Age** | **Income** |  |  |
| 1 | 21 | 24,000 |  |
| 2 | 32 | 48,000 |  |
| 3 | 62 | 83,000 |  |
| 4 | 72 | 61,000 |  |
| 5 | 84 | 52,000 |  |

| **Fig. 1(b): Model 1** | **Fig. 1(c): Model 2** | **Fig. 1(d): Model 3** |
| --- | --- | --- |
|  |  |  |

1. **Which of these three models is the right predictive model for the underlying data? You can judge on the basis of model fitting, whether underfitting or overfitting etc.**



1. **Justify your answer in 100-150 words.**
2. **Inductive models use the process of induction to learn from examples, whereas deductive models use the process of deduction to apply already accepted truths to arrive at a solution. Can you identify if the given models are inductive or deductive?**

