***MA4128 [30 Marks]***

**Part 1 Dimensionality Reduction [6 marks]**

KMO test value

Principal Component Analysis

Eigenvalues

* Threshold of one
* percentage of variance explained

Scree-plot

Draw the Scree-plot

Percentage of variance explained

***sampleA.sav***

**Part 2 cluster analysis [6 Marks]**

1. Hierarchical

2. K means

***sampleB.sav***

**Part 3 linear models [6 Marks]**

Multicollinearity variance inflation factor

tolerance

Multiple Linear Regression

Variable Selection Procedures

Stepwise Regression

***sampleC.sav***

**Part 4 Logistic Regression [6 Marks]**

Dummy variables

Odds Ratio ( **exp(B)** )

confidence intervals for odds ratio

optimal collection of predictors

***sampleD.sav***

**Part 5 Discriminant Analysis [6 Marks]**

Predictive Categorical Groups