



The University of Fiji



Undergraduate Programme
Department of Computer Science & Information Technology
Semester 1 Year 2017
FINAL EXAMINATION PAPER

ITC355 BUSINESS INTELLIGENCE

Important Instructions to Students:

1. Read the questions, instructions carefully and answer the questions.
2. You are allowed an **extra 10 minutes reading time** (during this time, you are not allowed to write with pen) and **180 minutes (3 Hours) to complete this paper.**
3. Silent, non-programmable calculators are allowed, but not supplied.
4. Write all your answers in the answer booklet provided. If you need extra sheets, please ask from the supervisor. Write your name, course code and student identification number in the answer booklet and in the attendance sheet.
5. **This Final Course Examination Paper is worth 100 marks contributes 50% of the total course assessments.**
6. This paper contains two (2) sections A and B. Answer all questions.
7. Write all your answers legibly. The marker has the right to award zero for answers that are not legible.
8. This is a **Closed Book Examination**. The University views plagiarism, cheating and dishonest practice as serious offences and if found, offenders are penalized.

Examination Paper Content (Format):

<u>Section</u>	<u>Question</u>	<u>Content</u>	<u>Marks</u>	<u>Suggested Time</u>
A	1-4	Short Questions	40	70 minutes
B	5-10	Essay Questions	60	110 minutes
		TOTAL	100	180 Minutes

Section A: Short Questions

Question-1

Marks

- | | |
|--|---|
| a.) Define the term big data and data mining. | 2 |
| b.) What is the difference between supervised and unsupervised learning? | 2 |
| c.) How should you split data for training and testing a model in supervised learning? | 2 |
| d.) What is the difference between shallow and deep knowledge? | 2 |
| e.) How could you differentiate the terms: Classification and Clustering? | 2 |

Question-2

- | | |
|---|---|
| a.) Explain the terms with examples: data, information and knowledge. | 3 |
| b.) Define the terms: nominal, ordinal and interval data? | 3 |
| c.) What is the difference between data normalization and transformation? | 2 |
| d.) What is missing data? Explain with example. | 2 |

Question-3

- | | |
|--|---|
| a.) Classification is a supervised way of learning. Explain? | 2 |
| b.) Briefly explain three popular classification techniques? | 3 |
| c.) How can you select the best classifier for your current classification problem? | 2 |
| d.) Define three classification problems in an university which you can solve using classification algorithms? | 3 |

Question-4

- | | |
|---|---|
| a.) What is clustering? Explain with two examples. | 3 |
| b.) Explain two popular algorithms for clustering? | 2 |
| c.) How does machine form clusters? Explain graphically. | 2 |
| d.) How can you differentiate a clustering task than a time series analysis task? Explain with examples | 3 |

Section B: Essay Questions

Question-5

Marks

How can data mining help a business owner? Explain with five examples.

10

Question-6

Construct an arff data file with the name of Diabetic. Justify the attribute names. Explain also, how did you handle the missing values?

10

Question-7

What is WEKA? Explain the main features of WEKA. What are the other popular data mining tools? Explain at least three.

10

Question-8

Define the term ANN and SVM. Which one is better to solve your classification task? Explain from your laboratory experiences.

10

Question-9

What do you mean by market basket analysis? How does it work in the business world? Explain with a real world example using business data.

10

Question-10

How is clustering task different from classification? Can you convert a classification problem into clustering? Explain with a real life problem in the airline industry.

10

-The End-

100

100

100