(Knowledge for Development)

KIBABII UNIVERSITY

(KIBU)

UNIVERSITY EXAMINATIONS
2017/2018 ACADEMIC YEAR

END OF SEMESTER EXAMINATIONS
FOUR YEAR SECOND SEMESTER

FOR THE DEGREE IN COMPUTER SCIENCE
COURSE CODE: CSC 466E
COURSE TITLE: NEURAL NETWORKS

DATE: 17/10/2018　　　　**TIME:9-11AM**

INSTRUCTIONS

ANSWER **QUESTIONS ONE** AND **ANY OTHER TWO**.

QUESTION ONE [30 MARKS]

a. Define the term training set [2 marks]

b. With the aid of a diagram describe the biological neuron. Clearly label the parts of the biological neuron. [6 marks]

c. What are the dis advantages of conventional computers over neural networks [4 marks]

d. i. Describe unsupervised training algorithm? [6 marks]

ii. Distinguish between unsupervised learning and supervised learning? [6 marks]

e. Describe the importance of weights and bias in training using supervised learning algorithm [6marks]

QUESTION TWO [20 MARKS]

a. Distinguish between single perception and multi layer perception? [2 marks]

b. Explain any THREE types of rules used in neural networks [9 marks]

c. Describe any three areas where neural networks can be applied [9 marks]

QUESTION THREE [20 MARKS]

a. How is over fitting and undercutting important to neural networks [2 marks]

b. Using a diagram give the mathematical representation of single neuron. Clearly labeling the components [6 marks]

c. Describe the importance of fuzzy inference system. [6 marks]

d. Explain the term generalization and why its important in neural networks [6 marks]

QUESTION FOUR [20 MARKS]

a. Can regression be applied in neural networks? Explain reasons [4 marks]

b. Describe any Four self organizing techniques used in neural networks [16 marks]

QUESTION FIVE [20 MARKS]

a. What is a hidden layer? Why is it important in neural networks [2 marks]

b. Which learning method among reinforced learning, supervised learning and unsupervised learning would be appropriate for fraud detection and Corruption detection? Justify your answer [18 Marks]