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**KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2016/2017 ACADEMIC YEAR
THIRD YEAR, SECOND SEMESTER EXAMINATION
FOR THE DEGREE OF BACHELOR OF SCIENCE
(COMPUTER SCIENCE)**

Date: 10th August, 2016.
Time: 11.00am – 1.00pm

KCS 309 - ARTIFICIAL INTELLIGENCE

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

- a) Define Artificial Intelligence. (2 Marks)
- b) AI techniques are concerned with how we represent, manipulate and reason with knowledge in order to solve problems. Briefly mention four techniques that can be applied to a variety of AI tasks. (4 Marks)
- c) Briefly describe two search techniques in AI. (4 Marks)
- d) Briefly write down the steps for Genetic Algorithms? (12 Marks)
- e) Distinguish between hard and soft Artificial Intelligence. (4 Marks)
- f) Briefly outline the four important goals based on the various definitions of Artificial Intelligence. (4 Marks)

QUESTION TWO (20 MARKS)

- a) Describe five applications of Artificial Intelligence. (10 Marks)
- b) Briefly explain five major paradigms of machine learning. (10 Marks)

QUESTION THREE (20 MARKS)

- a) State the dimensions in which search strategies are evaluated. (4 Marks)
- b) State and briefly explain some of the widely used control strategies for search. (10 Marks)
- c) List six types of heuristic search techniques. (6 Marks)

QUESTION FOUR (20 MARKS)

- a) Briefly describe Depth First Search and Breadth First Search with the help of diagrams. (10 Marks)
- b) Describe five equivalence laws. (10 Marks)

QUESTION FIVE (20 MARKS)

- a) Describe five categories of knowledge. (10 Marks)
- b) List the Natural Reduction Rules. (5 Marks)
- a) Briefly explain the various components of the knowledge pyramid. (5 Marks)