Infrastructure
University
Kuala Lumpur

FINAL EXAMINATION
JUNE SEMESTER 2015

BACHELOR OF COMPUTER SCIENCE (HONS)
BACHELOR OF INFORMATION TECHNOLOGY (HONS) IN
SOFTWARE ENGINEERING

ARTIFICIAL INTELLIGENT
(BTT 307)

(TIME : 3 HOURS)

MATRIC NO.   :

IC. / PASSPORT NO. :

LECTURER   : DR.SUSANE KAMEL SHARIAH

GENERAL INSTRUCTIONS

1. This question booklet consists of 5 printed pages including this page.
2. In **SECTION A** there are **SIX (6)** questions. Answer **ALL** in the Answer Booklet.
3. In **SECTION B** there are **FIVE (5)** questions. Answer **ANY FOUR (4)** in the Answer Booklet.

INSTRUCTIONS: **TIME:** *3 HOURS*

SECTION A   **(60 MARKS)**

There are SIX (6) questions in this section. Answer ALL Questions in the Answer Booklet.

1. Answer the following questions.

    a) List and describe FOUR (4) features of prolog language?

    (12 marks)

    b) List EIGHT (8) the areas in which prolog programming language is used

    (8 marks)

    c) Describe FOUR (4) data types in prolog programming language?

    (8 marks)

2. Define the following:

    a) Action

    (2 marks)

    b) Search node

    (2 marks)

    c) Goal

    (2 marks)

3. Answer the following:

    a) Describe the best way to go for Game playing problem with example?

    (5 marks)

    b) Differentiate between traditional computer system programs and expert systems.

    (5 marks)

4. Describe THREE (3) advantages and TWO (2) disadvantages of Breadth-First Search Algorithm?

    (6 marks)

5. Compare between Artificial Intelligent (AI) and Natural Intelligent

    (5 marks)

6. An agent is a machine that can be viewed as perceiving its environment through sensors and acting upon that environment through actuators. Draw the diagram indicating the parts of the component that develops the environment for the learning agent.
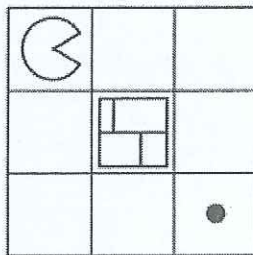
(5 marks)

There are THREE (3) questions in this section. Answer ANY TWO (2) questions in the Answer Booklet.

1. Describe the Turing Test for intelligence.

(20 marks)

2. In the game of Surrealist Pacman ☾ , Pacman plays against a moving wall ⊞ On Pacman's turn, Pacman must move in one of the four cardinal directions, and must move into an unoccupied square. On the wall's turn, the wall must move in one of the four cardinal directions, and must move into an unoccupied square. The wall cannot move into a dot-containing square. Staying still is not allowed by either player. Pacman's score is always equal to the number of dots he has eaten. The first game begins in the configuration shown below. Pacman moves first.

a) Draw a game tree with one move for each player. Draw only the legal moves.

(15 marks)

b) According to the depth-limited game tree you drew above what is the value of the game? Use Pacman's score as your evaluation function.

(5 marks)

3. The following question will be using a functional logic language (Prolog)
   a) Provide a general definition for the below :
      i. mother
      ii. father
      iii. brother
      iv. sister

   b) Provide FIVE (5) expressions for defining male, female and parent

   The following are the information to be used:
   - Use the following names for male   (buford, ben, larry jesse, james and benard).
   - For female, use the following names (latoya, kamelia,amelia,amy,Bessie and Albertine).
   - Where latoya is parent of larry , buford is parent of larry, kamelia is parent of larry , larry is parent of jesse , ben is parent of benard, amelia parent of james, latoya parent of amelia, buford parent of amelia, larry parent of amy, ben parent of albertine.

                                                                              (20 marks)

*** END OF QUESTIONS ***