

PE-651
MASTER OF SCIENCE IN INFORMATION TECHNOLOGY (SECOND SEMESTER)

Examination JUNE 2022

Compulsory/Optional

Group-

Paper-

Name/Title of Paper- AI & EXPERT SYSTEMS

Time: Three Hours

Maximum Marks-080

Minimum Passing Marks-029

Note: Answer From Both the section as directed. The figures in the right hand margin indicate marks.

Section A

1 Answer the objective type question.

10X1

- I. What is Artificial Intelligence?
 - a. Artificial Intelligence is a field that aims to make humans more intelligent
 - b. Artificial Intelligence is a field that aims to improve the security
 - c. Artificial Intelligence is a field that aims to develop intelligent machines
 - d. Artificial Intelligence is a field that aims to mine the data
- II. Which of the following is the branch of Artificial Intelligence?
 - a. Machine Learning
 - b. Cyber forensics
 - c. Full-Stack Developer
 - d. Network Design
- III. What is the function of an Artificial Intelligence "Agent"?
 - a. Mapping of goal sequence to an action
 - b. Work without the direct interference of the people
 - c. Mapping of precept sequence to an action
 - d. Mapping of environment sequence to an action
- IV. Which of the following is not the commonly used programming language for Artificial Intelligence?
 - a. Perl
 - b. Java
 - c. PROLOG
 - d. LISP
- V. Which of the following machine requires input from the humans but can interpret the outputs themselves?
 - a. Actuators
 - b. Sensor
 - c. Agents
 - d. AI system
- VI. Which of the following is an advantage of using an expert system development tool?
 - a. imposed structure
 - b. knowledge engineering assistance
 - c. rapid prototyping
 - d. all of the mentioned
- VII. Input segments of AI programming contain(s)?
 - a. Sound
 - b. Smell
 - c. Touch
 - d. none of the mentioned
- VIII. Which of the following environment is strategic?

- a. Rational
 - b. Deterministic
 - c. Partial
 - d. Stochastic
- IX. What is the total number of quantification available in artificial intelligence?
- a. 4
 - b. 3
 - c. 1
 - d. 2
- X. What is Weak AI?
- a. the study of mental faculties using mental models implemented on a computer
 - b. the embodiment of human intellectual capabilities within a computer
 - c. a set of computer programs that produce output that would be considered to reflect intelligence if it were generated by humans
 - d. all of the mentioned

2 Answer the short type question.

5X2

- a. Define knowledge.
- b. What is FOPL?
- c. Write logical function of LISP.
- d. Define planning in terms of natural language.
- e. Write structure of expert system.

Section B

Answer the Long type question.

12*5

3. Define AI and explain different techniques of AI with their environment.

Or

Explain the following

- a. Best first search
- b. Ao* algorithm

4. What do you mean by knowledge representation? Differentiate procedural and declarative knowledge.

Or

Explain the following

- a. A. Computable functions and predicate
- b. B. Forward vs backward reasoning.

5. Describe structure of LISP programming language and explain different manipulation and predicate function with example.

Or

- a. Write a lisp program to calculate sum of array element.
- b. Write a lisp Program to explain logical function.

6. Write different steps used in natural processing language.

Or

Explain different system planning used in natural processing language.

7. What is expert system? Explain different types of expert system.

Or

Explain the following.

- a. Knowledge Acquisition and validation tool
- b. Knowledge building system tools