Q.17 Discuss various challenges in implementing NLP.

Q.18 What are the ethical and social implications of AI?

Q.19 What is biological neural network in the human brain?

Q.20 What is logic-based learning? Give an example of Logic-Basic Learning.

Q.21 Explain four types of Learning in Machine Learning?

Q.22 How do you see future of NLP in the next 10 years?

## SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions.          (2x8=16)

Q.23 Define Computer Vision. Use an example to demonstrate its Relation with Natural Language Processing.

Q.24 Define Artificial Intelligence. Explain various security relevant properties of Artificial Intelligence with example.

Q.25 Write a short note on the following (any two):

i)   knowledge Representation

ii)  Artificial Neurons

iii) Linear and Non-Linear activation functions

**2nd Sem / Artificial Intelligence & Machine Learning**

**Subject : Fundamentals of Artificial Intelligence**

Time : 3 Hrs.                                    M.M. : 60

### SECTION-A

**Note:** Multiple choice questions. All questions are compulsory          (6x1=6)

Q.1 Which of the following is an application of artificial Intelligence?

a)   It helps to exploit vulnerabilities to secure the firm

b)   Language understanding and problem-solving (Text analytics and NLP)

c)   Easy to create a website

d)   It helps to deploy applications on the cloud

Q.2 _____ is not an application of AI.

a)   Database Management System

b)   Digital Assistant

c)   Natural language processing

d)   Computer vision

Q.3    Why do we need biological neural networks?

a)    to solve tasks like machine vision & natural language processing

b)    to apply heuristic search methods to find solutions of problem

c)    to make smart human interactive & user-friendly system

d)    all of the mentioned

Q.4    Which of the following is a subset of machine learning?

a)    Numpy              b)    SciPy

c)    Deep learning      d)    None of the above

Q.5    Which is considered the branch of Artificial Intelligence?

a)    Cyber Forensics

b)    Machine Learning

c)    Network Design

d)    Full-stack Developer

Q.6    _____ is the common language for AI.

a)    Lisp               b)    Python

c)    PHP                d)    Java

**SECTION-B**

**Note:** Objective/ Completion type questions. All questions are compulsory.                (6x1=6)

Q.7    Expand NLP_____.

Q.8    Modern NLP algorithms are based on machine learning, especially statistical machine learning. (T/F)

Q.9    Define Artificial Neural Network.

Q.10   Define Semi-Supervised Learning.

Q.11   _____ is the simulation of human intelligence processes by machines, especially computer systems.

Q.12   A major thrust of AI is in the development of computer functions associated with human intelligence.(T/F)

**SECTION-C**

**Note:** Short answer type questions. Attempt any eight questions out of ten questions.                (8x4=32)

Q.13   Discuss various types of Artificial Intelligence.

Q.14   Explain Single layer and Multi-layer Artificial Neural Network.

Q.15   Write six applications of AI used in various fields.

Q.16   Differentiate between Deep Learning and Machine Learning (At least four Differences).