

[Time: 3 Hours]

- All questions are compulsory.
- Marks are mentioned on the right side of each question.

Group (A)

Q.1 Choose the most suitable answer from the following options.

(1\*20=20)

- i. The function of an Artificial Intelligence "Agent" is  
★ Mapping of goal sequence to an action (c) Mapping of precept sequence to an action  
(b) Work without the direct interference of the people (d) Mapping of environment sequence to an action
- ii. Artificial Intelligence is about \_\_\_\_\_.  
★ Playing a game on Computer (c) Programming on Machine with your Own Intelligence  
★ Making a machine Intelligent (d) Putting your intelligence in Machine
- iii. Which of the following is a component of Artificial Intelligence?  
★ Learning (b) Training (c) Designing (d) Puzzling
- iv. Which of the following is a component of Artificial Intelligence?  
★ Python (b) Java (c) LISP (d) PHP
- v. The main task of a problem-solving agent is  
(a) Solve the given problem and reach to goal  
(b) To find out which sequence of action will get it to the goal state  
★ A and B Both  
(d) None of these
- vi. The correct extension of the Python file is  
★ .py (b) .python (c) .p (d) None of these
- vii. Which keyword is used for function in Python language  
(a) Function ★ Def (c) Fun (d) Define
- viii. NumPy stand for \_\_\_\_\_.  
★ Numerical Python (b) Natural Python (c) Numeric Program (d) Nonlinear Python
- ix. Which of the following is used to reshape a NumPy array  
★ reshape() (b) resize() (c) Both A and B (d) None of the above
- x. Pandas key data structure is called  
(a) Keyframe ★ DataFrame (c) Statistics (d) Econometrics
- xi. In pandas, Index values must be?  
(a) unique (b) hashable ★ Both A and B (d) None of these

- xii. Matplotlib is  
(a) A programming language (c) A database management system  
★ A data visualization library (d) An operating system
- xiii. How can you save a Matplotlib plot as an image file?  
(a) By using the save() function ★ By using the savefig() function  
(b) By using the export() function (d) By using the exportfig() function
- xiv. Artificial Intelligence is associated with computers of which generation  
(a) Second (b) First ★ Fifth (d) Third
- xv. Which are the advantages of functions in python?  
(a) Reducing duplication of code (c) Improving clarity of the code  
(b) Decomposing complex problems into simpler pieces ★ All of these
- xvi. Which of the following is not a core data type in Python programming?  
(a) Tuples (b) Lists ★ Class (d) Dictionary
- xvii. What is the other name of informed search strategy?  
(a) Simple search ★ Heuristic search (c) Online search (d) None of these
- xviii. How many types are available in uninformed search method?  
(a) 3 (b) 4 ★ 5 (d) 6
- xix. What is the default data type of NumPy arrays?  
(a) int32 ★ float64 (c) object (d) None of the above
- xx. which library is the most used visualization library in python?  
(a) visual (b) matplotlib ★ matplotlib (d) matlab

Group (B)

- Q.2 Define Artificial intelligence. State the Goals and importance of Artificial intelligence 4  
OR  
Discuss the various characteristics of intelligent agents 4
- Q.3 Discuss the advantages and disadvantages of Best First Search 4  
OR  
Explain in brief various Python tokens 4
- Q.4 Discuss the different conditional statements 'for loop' and 'while loop'. 4  
OR  
Discuss various string operations while using python programming. 4
- Q.5 Compare between Qualitative and Quantitative data analyses 4  
OR  
Write down the difference between Data Analysis and Data Analytics 4

Q.6 Explain in brief the importance of Pandas data structures in Artificial intelligence. 4

OR

Discuss the important feature of PyPlot package. 4

Group (C)

Q.7 Describe the various types of Artificial intelligence. 6

OR

Describe the various types of Search strategies for problem solving. 6

Q.8 Describe procedure to Import various Library and functions in the Python. 6

OR

Explain the various data types used in python programming. 6

Q.9 Write a Programs using NumPy for array manipulations. 6

OR

Describe the installation procedure of NumPy Library. 6

Q.10 Describe the use of Pandas data structure for data analysis. 6

OR

Describe the PyPlot package with the help of figures and subplots. 6

Q.11 Differentiate various charts based on their applications: i) pie chart ii) Histogram iii) Line chart. 6

OR

Write short notes on any two of the following: i) N Queen Problem ii) 8Puzzle Problem iii) Tuples. 6