

IMSc (AIML) Sem.-4 Examination

CC-215

Python for Machine Learning

April-2025

[Max. Marks : 70]

Time : 2-30 Hours]

Instructions: All questions are compulsory. Use of non-programmable scientific calculator is allowed.

- Q.1** (a) What is Object Oriented Programming? What are the main features of OOPs? (07)
 (b) What is the difference between method overloading and method overriding? (07)
- OR**
- (a) What is inheritance? What are the different types of inheritance? (07)
 (b) What is polymorphism? What is the difference between static polymorphism and dynamic polymorphism? (07)
- Q.2** (a) What is Pandas? What is the difference between Series and DataFrames in Pandas? (07)
 (b) Explain any five subpackages of SciPy. (07)
- OR**
- (a) Which are the different types of data structures in Pandas? What is categorical data in Pandas? (07)
 (b) Explain the following terms of Tensor: Shape, Rank, Size, Axis or Dimension (07)
- Q.3** (a) What is Tensor? How to create a Tensor in Python? (07)
 (b) What are the core features of Pandas? (07)
- OR**
- (a) What is SciPy? What is the difference between Numpy and SciPy Library. (07)
 (b) What functions is used to organize widgets throughout the parent widget area? (Python Tkinter) (07)
- Q.4** (a) What is NumPy? What are the advantages of NumPy over regular Python lists? (07)
 (b) Differentiate between data abstraction and encapsulation. (07)
- OR**
- (a) Explain what is ndarray in NumPy? What are the differences between NumPy arrays and matrices? (07)
 (b) What is operator overloading? (07)
- Q.5** Attempt any **SEVEN** out of **TWELVE**: (14)
- (1) What is Object?
 - (2) What is class?
 - (3) What is Padx and Pady in Tkinter?
 - (4) What is GUI?
 - (5) What is data abstraction?
 - (6) What is data encapsulation?
 - (7) What is Superclass and subclass in oops?
 - (8) What is Tkinter widgets?
 - (9) What is TensorFlow?
 - (10) Why Python is trending now a days?
 - (11) What command forces your application to loop until it is closed? (Python Tkinter)
 - (12) What function is used to create a label? (Python Tkinter)
