[7 MARKS] QUESTIONS

1. Explain any 3 advantages of python as programming language. Compare python with Java by mentioning one point , wrt time required to develop the code. Give the syntax of a) verifying the object is of a certain datatype, b)coercing object to new data type. Give command for 'logical AND' and 'bitwise AND' operator.

Ans:

- Provides good ecosystem of libraries that are robust and varied.
- Supports multiple programming paradigms like functional, structural ,etc.
- Dynamic typing- type of a variable is determined at runtime based on the value assigned to it.
- Deallocates objects which are not used for long
- Late binding- methods are looked upon by name during runtime.
- Python offers a range of powerful framework for web app development that can help streamline the development process and ensure that your application is reliable and scalable.
  (any 3 points)

  Comparison of python with java
  Java is statically typed , therefore requires more time to develop the code. On the other hand python, which is dynamically typed tend to be less verbose offering more readability.

  Syntax of a) verifying the object is of a certain datatype
  type(object) is datatype

  b)coercing object to new data type
  datatype(object)

  command for logical AND: and
  command for bitwise AND: &

2. Explain indexing as a sequence data operation. Give an example code of tuple and performing indexing operation on it . Is indexing possible in dictionary in the way that we perform in lists? If yes, support answer with an example and if no, how are the values obtained.

Ans:

- Indexing just means accessing elements. Syntax: object[index]
- To access elements the square brackets can be used.
- index() method finds the first occurrence of the specified value and returns it's position. Syntax: object.index(sub[,start[,end]]) .
- index starts from 0
- applicable for ordered sequence only

- negative indexing used to access elements from the end of the sequence data (last element index=-1)

  example:
  tup_sample= (1,2,3,4,3,'py')
  tup_sample[2]
  #output=> 3

  No, indexing is not possible in dictionary in the way that we perform in lists. The values in the dictionary are indexed using keys, they are not held in any order
  Example:
  Dict_sample= {1:'first', 'second':2,3:3,'four':4}
  Dict_sample[1]
  # 'first'

  Dict_sample[2]
  # keyerror

  [MCQ]

  1. **What is the primary use of the Pandas library in Python?**
     a. For creating complex data visualizations.
     b. For data manipulation and analysis using DataFrames.
     c. For performing high-performance numerical computations
     d. For building and training machine learning models.

  Ans: option b

  2. **What is the correct way to format a string to align the text 'Price: 12.3' to the right within a field of 10 characters using the `str.format()` method?**
     a. 'Price: {0:>10}'.format(12.3)
     b. 'Price: {:>10}'.format(12.3)
     c. 'Price: {:>10.1f}'.format(12.3)
     d. 'Price: {:<10.1f}'.format(12.3)

  Ans: option c