



RAN - 2111040102040002

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MCA (Sem.- II) Examination April - 2025

Python Programming Language (Paper : 204)

Time: 3 Hours]

[Total Marks: 70

સૂચના : / Instructions

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નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the details of signs on your answer book

Name of the Examination:

☛ **MCA (Sem.- II)**

Name of the Subject :

☛ **Python Programming Language (Paper : 204)**

Subject Code No.: **2111040102040002**

Seat No.:

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Student's Signature

Q.1 Answer the following: (7 Marks each)

14

A) What is a set in Python, and how is it different from a list?

OR

A) Explain the meaning of Python being “interpreted”. Also write the main features of Python?

B) Describe the *continue* statement in Python. How is it different from *break*? Support your explanation with a code example

Q.2 Answer ANY TWO: (7 Marks each)

14

A) Describe recursion in Python with an example program to calculate the factorial of a number.

B) Compare lambda functions with regular functions in Python. When would you prefer one over the other?

C) Describe how a for loop works in Python. Provide an example to iterate through a list.

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- Q.3 Do as Directed**
- A) What are the main file access modes in Python? Explain each with a small example. **6**
- B) How do you create a new file in Python? Write a script that checks if a file exists and creates one if it doesn't. **5**
- OR**
- B) What is a Python module? Analyze the advantages of using modules in large-scale applications. **5**
- C) Which function is used to get the current date and time in Python? Give Example. **3**
- Q.4 Answer the following:** **14**
- A) Evaluate the effectiveness of using try-except-finally blocks in handling errors compared to using conditional checks in Python. Provide examples to support your answer. **6**
- B) Explain how inheritance in Python allows code reuse. Provide an example showing how a child class inherits from a parent class. **5**
- C) Apply plt.grid() to add a grid to a plot and explain its significance. **3**
- OR**
- C) What is the purpose of the xlabel() and ylabel() functions? Explain with an example. **3**
- Q.5 Answer the following:** **14**
- A) Explain numpy array slicing in detail. **6**
- OR**
- A) Use np.zeros() and np.ones() to create two arrays of shape (3,3) and add them element wise **6**
- B) Write following Program to create a **NumPy** array of integers from 1 to 20 and display its **dtype, shape, ndim, and itemsize.** **5**
- C) Write the command to install **NumPy** in Python and verify the installation using a small script. **3**