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RAN-2111040102040002**MCA (Sem. II) Examination May - 2023****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.:

Student's Signature

Q.1 Do as directed: [14]

A) Explain the features of Python that make it a popular choice for programming beginners. List the different datatypes supported by Python with relevant examples. [07]

OR

A) Explain the concept of Python identifiers. What are the rules to define identifiers in Python? Provide some examples of good and bad identifier names. [07]

B) Explain bytes and bytearray data types giving suitable examples. [05]

C) What is the Learning Environment (IDLE) in Python? [02]

OR

C) What is an iterator? Give an example. [02]

Q.2 Do as directed: [14]

A) Explain the different control structures in Python programming language. Provide examples of how if, if-else and nested if statements can be used to implement control structures in Python. [07]

B) Write a user defined iterative function to find factorial of a number n. [05]

OR

B) Write a user defined recursive function to find factorial of a number n. [05]

C) Give example of shorthand if statement. [02]

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- Q.3 Do as directed:** [14]
A) Explain the differences between local and global variables in Python functions with suitable examples. [07]

OR

- A) What is the Date & Time module in Python? What are the different classes and functions provided by this module? How are these functions used in Python programs? Provide examples. [07]
B) What are external modules in Python? Explain the process of installing and using external modules in Python giving suitable example. [05]
C) What is the syntax for creating a new file in Python? Give suitable example. [02]

- Q.4 Do as directed:** [14]
A) What is the purpose of exception handling in Python programming? Discuss the try-catch-finally block in detail with an example. [07]

OR

- A) What is inheritance in Python? Explain with an example how inheritance is implemented in Python. [07]
B) What is the use of the init() function in Python classes? Explain with an example how this function is used in Python. [05]
C) What is the self parameter in Python classes? Why is it important? [02]

- Q.5 Do as directed:** [14]
A) Explain the purpose of NumPy in Python programming. Discuss the different NumPy data types with examples. [07]
B) How do you perform indexing and slicing on a NumPy array? Explain with an example. [05]
C) What is the purpose of the empty() function in NumPy? Provide an example. [02]
