

**II B. Tech I Semester Supplementary Examinations, October/November - 2020****PYTHON PROGRAMMING**

(Com to CSE &amp; IT)

Time: 3 hours

Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)2. Answer **ALL** the question in **Part-A**3. Answer any **FOUR** Questions from **Part-B**

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**PART -A**

1. a) What Python uses, static typing or dynamic typing? Justify your answer with an example. (2M)
- b) Write a for loop that prints numbers from 0 to 57, using range function. (2M)
- c) Write a Python statement that swaps values of two variables. (only one line statement) (2M)
- d) What is PIP. (2M)
- e) How to create a destructor in Python? Give an example. (3M)
- f) Write python script to print current date and time. (3M)

**PART -B**

2. a) Explain the history of Python evolution. (7M)
- b) Write a Python program that reads four integers from user, prints them with a single print statement, without any space or newline between/after the values. (7M)
3. a) What is the purpose of else clause for a loop? Explain how else works with while and for loops, with examples. (8M)
- b) Write a Python program that prints multiplication table of a given number. (6M)
4. a) What is a list in Python? How to create nested lists? Demonstrate how to create and print a 3-dimensional matrix with lists. (7M)
- b) Write a Python program that counts the number of occurrences of a letter in a string, using dictionaries. (7M)
5. a) Explain about different types of arguments in Python. (8M)
- b) Write a Python function that computes the harmonic sum of n. (6M)  
Harmonic Sum =  $(1/2) + (1/4) + (1/8) + (1/16) + \dots + (1/2^n)$
6. a) Demonstrate implementation of hierarchical inheritance in Python, with a program. (7M)
- b) What happens if except clause is written without any Exception type? Explain with an example. (7M)
7. a) Explain how to write test cases in Python. (7M)
- b) Write a Python turtle program to draw a blue square of size 200 and the draw a green circle which touches the square on all sides from inside. (7M)

Code No: 137GD

**R16**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B. Tech IV Year I Semester Examinations, December - 2019**

**PYTHON PROGRAMMING**

**(Common to CSE, IT)**

**Time: 3 Hours**

**Max. Marks: 75**

**Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b as sub questions.

**PART – A**

**(25 Marks)**

- 1.a) State any four applications where python is more popular. [2]
- b) List out the main differences between lists and tuples. [3]
- c) What are the uses of File object? [2]
- d) Give a brief description of several Built-in attributes related to File objects. [3]
- e) Summarize the purpose of pipe and dot symbols used for pattern matching. [2]
- f) Explain the basic functionality of match( ) function. [3]
- g) What is the need of Tkinter module in python? [2]
- h) How to create Label widget in Python? [3]
- i) State the need of persistent storage. [2]
- j) Discuss the SQL commands/statements used for creating, using and dropping a database. [3]

**PART – B**

**(50 Marks)**

- 2.a) How to declare and call functions in Python programs? Illustrate with an example script.
  - b) List and explain few most commonly used built-in types in python. [5+5]
- OR
3. Summarize various operators, built-in functions and standard library modules that deals with Python's numeric type. [10]
  4. Explain the following file built-in functions and method with clear syntax, description and illustration:  
a) open( )      b) file( )      c) seek( )      d) tell( )      e) read( ) [10]
- OR
- 5.a) How does try-except statement work? Demonstrate with an example python code.
  - b) Illustrate the concept of importing module attributes in python scripts. [5+5]
  6. Examine how python supports regular expressions through the 're' module with brief introduction and various built-in methods related to it. [10]
- OR
- 7.a) What is the motivation behind parallelism and state how python achieves parallelism?
  - b) Explain briefly about thread and threading module objects in Python. [3+7]

8. Consider a Python GUI program that produces a window with the following widgets using python code:  
a) A button to retrieve the next value in that list(if there is one).This button is displayed if there is no next value in the list  
b) A label to display the number of the items being displayed and the total number of items [10]
- OR
9. Give an overview and demonstration of building web applications using python's cgi module. [10]
- 10.a) What is a cursor object? Explain various methods and attributes of cursor object.  
b) What do you mean by a constructor? List and describe various constructors used for converting to different data types. [5+5]
- OR
11. Describe in detail about Python SQLAlchemy ORM with a case study of Employee role database. [10]

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## II B. Tech I Semester Supplementary Examinations, May - 2019

# PYTHON PROGRAMMING

(Com to CSE & IT)

Time: 3 hours

Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)

2. Answer **ALL** the question in **Part-A**

3. Answer any **FOUR** Questions from **Part-B**

**PART -A**

1.
  - a) What is the difference between compiled and interpreted languages? (2M)
  - b) How pass statement is different from a comment? (2M)
  - c) What are mutable and immutable types? (3M)
  - d) What is the purpose of global keyword in Python? (2M)
  - e) How to handle multiple exceptions with single except clause? (3M)
  - f) Write Python script that prints calendar of November 2017. (2M)

**PART -B**

2. a) Differentiate between C++ and Python. (7M)  
b) Give a note on each of the below Python language constructs: (7M)  
(i) quotes (single, double and triple) (ii) multiline statements (iii) indentation
3. a) List different operators in Python, in the order of their precedence. (9M)  
b) Write a Python program to compute distance between two points in a 2-dimensional coordinate system. (5M)
4. a) Explain with an example, how + and \* operators work with strings. (6M)  
b) Write a Python program that prints the intersection of two lists. (without using list comprehension/sets) (8M)
5. a) What is lambda function? What are the characteristics of a lambda function? Give an example. (7M)  
b) Write a recursive Python function that recursively computes sum of elements in a list of lists. (7M)  
Sample Input: [1, 2, [3,4], [5,6]] Expected Result: 21
6. a) What are different types of inheritance supported by Python? Explain. (8M)  
b) What is the difference between else block and finally block in exception handling? Explain with an example program. (6M)
7. a) Explain about Radiobutton widget in tkinter. How to create two radiobutton sets (one for gender and another for Indian or not) on the same canvas. (7M)  
b) Write a Python program that creates two daemon threads and two non-daemon threads. Main thread should wait for all other threads to finish. (7M)

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**PART -A**

1. a) What is the difference between immediate mode and script mode? (2M)
- b) Give the differences between Generator function and a Normal function? (3M)
- c) What are iterators in Python? (2M)
- d) What are lambda functions in Python? (3M)
- e) Give the purpose of stamp( ) method? (2M)
- f) What is zlib? (2M)

**PART -B**

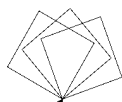
2. a) What is Python? Describe its features and applications? (7M)
- b) What is IDE? Describe in detail about the functioning of IDLE? (7M)
3. a) Differentiate between lists and tuples in Python? (7M)
- b) Explain in detail about Python type conversion and type casting? (7M)
4. a) What are operators in Python? Describe specifically about identity operator and membership operator? (7M)
- b) Write a python script to print the following pattern? (7M)

```

*   *   *   *
 *   *   *
  *   *
   *

```

5. a) Describe the Use of Inheritance in Python? (7M)
- b) Write in detail about Using Python Packages? (7M)
6. a) What is Module in Python? Explain, how can you use Modules in your program explain with an example code. (7M)
- b) Explain Python Built-in Exceptions? (7M)
7. a) Write in detail about Python assert statement? (7M)
- b) Write a script to draw the following pattern using Turtle? (7M)



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- ~~~~~

**PART -A**

1. a) What is a variable? How it is created and assigned a data type? (2M)
  - b) \_\_\_\_\_ (2M)
- ```
c = a << 2;    # 240 = 1111 0000

print "Line 5 - Value of c is ", c
```
- 
- Predict the output of the above code?
- c) Explain the syntax of "for- loop"? (2M)
  - d) What are generators in Python? (3M)
  - e) What is Method Resolution Order? (2M)
  - f) How to Write Text with Python Turtle? (3M)

**PART -B**

2. a) What is interactive Python shell? What is the significance of indentation in writing Python programs? (7M)
  - b) What are keywords in Python? Explain the rules for writing identifiers? (7M)
  3. a) Write a short note on Python strings? (7M)
  - b) Write a small script to illustrate output formatting? (7M)
  4. a) Write a script describing all assignment operators in Python? (7M)
  - b) Write a Python script to print the following pattern? (7M)
- ```

      *
    *   *
  *   *   *
*   *   *   *

```
5. Explain three intrinsic sequence types of Python language with examples? (14M)
  6. a) What is package in Python? Explain, how can you use package in your program with an example code? (7M)
  - b) Explain try except block in detail. (7M)
  7. a) Illustrate the internal structure of a typical Python module with the suitable example? (7M)
  - b) Write a brief note on pen control methods? (7M)



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**PART -A**

1. a) Give a brief note on " Creating Python Variable Names". (3M)
- b) Which is better to use with a print function, double quotes or single quotes? (2M)  
Why?
- c) Briefly elaborate the data types in Python? (3M)
- d) What are lists? (2M)
- e) Explain the syntax of WHILE-loop? (2M)
- f) Give the purpose of t.speed() *method*? (2M)

**PART -B**

2. a) Write short note on the following? (7M)
  - i) Multiline comments
  - ii) Docstring in Python
  - iii) Rules and Naming convention for variables and constants.
  - iv) Python import statement
- b) Write a program illustrating the use of numeric literals and string literals? (7M)
3. a) Write a short note on Python Dictionaries? (7M)
- b) What are operators in Python? (7M)
4. a) Write a Python script to calculate the area of triangle? (7M)
- b) List some of useful string methods/functions? (7M)
5. a) Give a note on Constructors in Python? (7M)
- b) What is method overriding in Python? (7M)
6. a) Write about Errors and Exception Handling in Python programming? (7M)
- b) How data hiding is achieved in Python? (7M)
7. a) Write a Python code to create an account object with at least two functions? (7M)
- b) Write a program to draw overlapping circles inclined to 30 degrees on the computer screen? (7M)





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**PART -A**

1. a) Define the scope and lifetime of a variable in Python. (2M)
- b) Why is \* called string repetition operator? (2M)
- c) What are the features of tuple data structure? (3M)
- d) Compare fruitful and void functions. (3M)
- e) Is it possible to convert a class object into a floating type value? (2M)
- f) Give the advantages of multi-threading. (2M)

**PART -B**

2. a) Python has developed as an open source project. Justify this statement. (7M)
- b) What are identifiers? Discuss the rules to name an identifier. (7M)
3. a) What are the different loop control statements available in Python? Explain with suitable examples. (7M)
- b) Write a Python program that calculates number of seconds in a day. (7M)
4. a) Explain the List Accessing Methods and List Comprehension. (7M)
- b) Write a Python program to read a word and print the number of letters, vowels and percentage of vowels in the word using a dictionary. (7M)
5. a) Describe about variable length arguments with suitable program. (7M)
- b) What are the two ways of importing a module? Which one is more beneficial? Explain. (7M)
6. a) How to implement method overriding in Python? Explain. (7M)
- b) Discuss with an example exceptions with arguments in Python. (7M)
7. a) Write a program for basic web browser using Tkinter which should have a Text widget where the user can enter a URL and a Canvas to display the contents of the page. (7M)
- b) Explain data compression using LZMA algorithm. (7M)

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**PART -A**

1. a) Define implicit conversion. (2M)
- b) Differentiate between logical and bitwise operators. (3M)
- c) What is cloning of List? (2M)
- d) Give an example for local and global scope of the variables in a function. (3M)
- e) Write the advantages of operator overloading. (2M)
- f) What is the purpose of tracer() method of turtle? (2M)

**PART -B**

2. a) Describe the features of Python. (7M)
- b) Python variables do not have specific types. Justify this statement with the help of an example. (7M)
3. a) Explain the precedence of operators in Python. (7M)
- b) Write a Python program to find the given year is leap year or not. (7M)
4. a) What is a tuple? How literals of type tuple are written? (7M)
- b) Explain the Python Dictionary Comprehension with examples. (7M)
5. a) Describe about default arguments with suitable program. (7M)
- b) Explain about fruitful functions with examples. (7M)
6. a) Write a Python program to create a histogram from a given list of integers. (7M)
- b) How to create a user defined exceptions? Explain. (7M)
7. a) Explain the methods that are used to synchronize threads. (7M)
- b) Write a menu driven program to create mathematical 3D objects. (7M)

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**PART -A**

1. a) List the rules to name an identifier. (2M)
- b) Define chained conditionals. (2M)
- c) What is the use of all(), any(), cmp() and sorted() in dictionary? (3M)
- d) Write a brief note on PIP. (2M)
- e) Differentiate between class variables and instance variables. (3M)
- f) Give examples of commonly used widgets. (2M)

**PART -B**

2. a) Explain about the need for learning Python programming and its importance. (7M)
- b) Write a Python program to demonstrate explicit conversion. (7M)
3. a) Explain about Identity operators in Python. (7M)
- b) What is the use of pass statement? Illustrate with an example program. (7M)
4. a) Explain the List Slicing and List Mutability. (7M)
- b) Discuss the basic Tuple operations with examples. (7M)
5. a) What are the different function prototypes? Explain with suitable examples. (7M)
- b) Explain the concept of namespaces with an example. (7M)
6. a) Explain how to implement inheritance in Python. (7M)
- b) How to handle an exception using try except block? Explain with the help of a program. (7M)
7. a) What is multithreading? Discuss about starting a new thread. (7M)
- b) Write a Python program to move the turtle forward and then backward after a delay of 2 seconds. (7M)

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**PART -A**

1. a) Write steps to run a Python script. (3M)
- b) Differentiate between integer and floating point numbers. (2M)
- c) Give an example for List comprehension. (2M)
- d) Define fruitful functions in Python. (3M)
- e) What is class instantiation? (2M)
- f) Which widget is used as a container to house other widgets and add borders? (2M)

**PART -B**

2. a) How is Python developed and supported? (7M)
- b) What are literals? Explain with the help of examples. (7M)
3. a) Create two sets of integers, and compute their intersection and union by using & and | operator expressions. (7M)
- b) Write a Python program using while loop to print first N numbers divisible by 5. (7M)
4. a) What is Sequence in Python? Explain its operations with suitable examples. (7M)
- b) Write a Python program to illustrate the comparison operators in tuple. (7M)
5. a) List out the types of Modules and Explain any two types in detail. (7M)
- b) Explain installing packages via PIP. (7M)
6. a) How to declare a constructor method in Python? Explain. (7M)
- b) Write a function called *oops* that explicitly raises a *IndexError* exception when called. Then write another function that calls *oops* inside a *try/except* statement to catch the error. What happens if you change *oops* to raise *KeyError* instead of *IndexError*? Where do the names *KeyError* and *IndexError* come from? (7M)
7. a) Explain various String pattern matching functions in Python. (7M)
- b) Discuss about unit testing in Python. (7M)

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**PART -A**

1. a) Explain input function. (2M)
- b) Give an example of lstrip( ) method. (2M)
- c) How to access values in a dictionary? (2M)
- d) What is default argument? (2M)
- e) What are basic overloading methods? (3M)
- f) Explain importing turtle graphics. (3M)

**PART -B**

2. a) What are IDLE usability features? (7M)
- b) Explain about keywords used in Python. (7M)
3. a) What are 4 built-in numeric data types in Python? Explain. (7M)
- b) Describe Python jump statements with examples. (7M)
4. a) Explain in detail about dictionaries in Python. (7M)
- b) Discuss about tuples in Python. (7M)
5. a) Describe anonymous functions examples. (7M)
- b) Why to use modules? How to structure a program? (7M)
6. a) Explain creating classes in Python with examples. (7M)
- b) Define error and exception. Distinguish between these two features. (7M)
7. a) Why testing is required? Explain in detail. (7M)
- b) Explain the following: i) Calendar module ii) Synchronizing threads (7M)

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**PART -A**

1. a) Explain output function. (2M)
- b) Give an example of istitle( ) method. (2M)
- c) Describe type( ) method with example. (2M)
- d) What is the general form of lambda? (2M)
- e) Explain about self variable with example. (3M)
- f) Describe time.time( ) method. (3M)

**PART -B**

2. a) Discuss bout variables and assignments. (7M)
- b) Explain about IDLE startup details. (7M)
3. a) What are Python assignment operators? Explain. (7M)
- b) Explain about iteration statements with examples. (7M)
4. a) Discuss about immutable constraints and frozen sets. (7M)
- b) What are built-in dictionary functions? Explain. (7M)
5. a) Distinguish between local and global variables with examples. (7M)
- b) Briefly discuss about Python packages. (7M)
6. a) Explain about handling an exception. (7M)
- b) Describe data hiding and constructors. (7M)
7. a) Explain about writing test cases and running tests. (7M)
- b) Explain the following: i) TopLevel widgets ii) Scale widget (7M)

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**PART -A**

1. a) What is indentation? (2M)
- b) Give an example of isalnum( ) method. (2M)
- c) Describe has\_key( ) method with example. (2M)
- d) What is a namespace? (2M)
- e) Explain user defined exceptions with examples. (3M)
- f) What is time tuple? (3M)

**PART -B**

2. a) Discuss about IDLE basic usage. (7M)
- b) Who uses python today? What are Python's technical strengths? (7M)
3. a) What are relational operators used in Python? Explain. (7M)
- b) Explain about string formatting operator with example. (7M)
4. a) Explain about built-in functions of tuple. (7M)
- b) Discuss about list and dictionary comprehensions. (7M)
5. a) Explain about required and variable-length arguments. (7M)
- b) Discuss in detail about the import statement. (7M)
6. a) Explain inheritance class with suitable example. (7M)
- b) Discuss about try except block with example. (7M)
7. a) Explain about unit testing in Python. (7M)
- b) Explain the following: i) zlib module ii) PanelWindow (7M)



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**PART -A**

1. a) What is byte code? (2M)
- b) Give an example of endswith( ) method. (2M)
- c) What is a set? Why sets? (2M)
- d) Define anonymous function. (2M)
- e) Give an example for raising an exception. (3M)
- f) What is tick? (3M)

**PART -B**

2. a) Briefly discuss about running Python scripts. (7M)
- b) Write the history of Python. (7M)
3. a) Explain Python bitwise operators with example. (7M)
- b) Discuss about Python operators precedence with example. (7M)
4. a) What are built-in dictionary functions? Explain. (7M)
- b) Explain about the importance of lists in Python. (7M)
5. a) Write a brief note on PIP. Explain installing packages via PIP. (7M)
- b) Explain about keyword and default arguments. (7M)
6. a) Give an overview of OOP terminology. (7M)
- b) Explain about except clause with multiple exceptions. (7M)
7. a) What is multithreading? Discuss about starting a new thread. (7M)
- b) Explain about colors and filled shapes. (7M)