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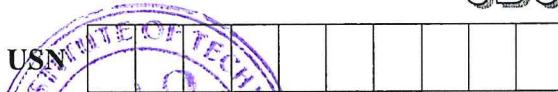
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# CBCS SCHEME



18CS55

## Fifth Semester B.E. Degree Examination, July/August 2022

### Application Development using Python

Time: 3 hrs

Max. Marks: 100

**Note:** Answer any FIVE full questions, choosing ONE full question from each module.

#### Module-1

1. a. List the salient features of Python Programming Language. (06 Marks)
- b. List and explain the Syntax of all Flow control statements with example. (08 Marks)
- c. Write a Python program to calculate the area of circle, rectangular and triangle. Print the results. (06 Marks)

**OR**

2. a. What is a Function? How to define a function in Python? Explain with suitable example. (06 Marks)
- b. Explain Local and Global scope of variable in Python with example. (08 Marks)
- c. What is Exception Handling? How Exceptions are handled in Python? Write a Python program with exception handling code to solve divide – by – zero error situation. (06 Marks)

#### Module-2

3. a. What is Lists? Explain the concept of list slicing with example. (06 Marks)
- b. What is Dictionary? How it is different from List? Write a program to count the number of occurrences of character in a string. (07 Marks)
- c. Write a Python program that accepts a sentence and find the number of words, digits, uppercase letters and lower case letters. (07 Marks)

**OR**

4. a. List out all the useful string methods which supports in Python. Explain with an example for each method. (10 Marks)
- b. What is the difference between copy.copy() and copy.deepcopy() Function applicable to a list or Dictionary in Python? Give suitable examples for each. (06 Marks)
- c. Write a Python to Swap cases of a given string

Input : Java

Output : jAVA.

(04 Marks)

#### Module-3

5. a. What are Regular Expressions? What are the different steps to be follow to use a Regular Expression in Python. (06 Marks)
- b. Describe the following with suitable Python code Snippet :
  - i) Greedy and Non Greedy Pattern Matching.
  - ii) findall() method of Regex object. (07 Marks)
- c. Write a Python program to extract Phone numbers and Email addresses using Regular Expressions. (07 Marks)

**OR**

1 of 2

- 6 a. How do we specify and handle Absolute Relative Path? (08 Marks)  
 b. Explain the File Reading / Writing process with suitable Python program. (06 Marks)  
 c. Write a Python program to create a folder PYTHON and under the hierarchy 3 files file1 , file2 and file3. Write the content in file1 as "VTU" and in file2 as "UNIVERSITY" and file3 content should be opening and merge of file1 and file2. Check out the necessary condition before write file3. (06 Marks)

**Module-4**

- 7 a. What is Class? How do we define a class in Python? How to instantiate the class and how class members are accessed? (08 Marks)  
 b. Write a Python program that uses datetime module within a class, takes a birthday as input and print users age and the Number of days , hours , minutes and seconds until their next birthday. (07 Marks)  
 c. Illustrate the concept of modifier with Python code. (05 Marks)

**OR**

- 8 a. Explain init and str method with an example Python program. (08 Marks)  
 b. What are Polymorphic functions? Explain with code Snippet. (06 Marks)  
 c. Illustrate the concept of Inheritance with example. (06 Marks)

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- 9 a. How do we download a file and save it to hard drive using request module? (06 Marks)  
 b. Write short notes on :  
     Creating , Copying and Rotating pages with respect to pdf. (06 Marks)  
 c. Explain Selenium's Web Drive method for Finding elements. (08 Marks)

**OR**

- 10 a. Write a program that takes a Number N from command line and creates an  $N \times N$  Multiplication table in Excel Spread Sheet. (10 Marks)  
 b. What is CSV and JSON Files? Explain with an example, Program the usage of Json Module in Python. (10 Marks)

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# CBCS SCHEME

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Fifth Semester B.E. Degree Examination, Feb./Mar. 2022

## Application Development using Python

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

1. a. Write a Python program to calculate the area and circumference of a circle Input the value of radius and print the results. (06 Marks)
- b. Explain with example code snippets, different syntax of range( ) function in Python. (06 Marks)
- c. Discuss local and global scope of variables in Python. Illustrate different scenarios, with an example. (08 Marks)

OR

2. a. Demonstrate the use of break and continue keywords using a code snippet. (06 Marks)
- b. List and define the use of comparison operators in Python. Write the output for the following expression in Python:  
i)  $2 * * 3$     ii)  $20 \% 6$     iii)  $20 // 6$  (06 Marks)
- c. What is user defined function? Write a function to check if a given number is a prime or not. (08 Marks)

### Module-2

3. a. What is a List? Explain the methods that are used to delete items from the list. (08 Marks)
- b. Write a program to take a sentence as input and display the longest word in the given sentence. (06 Marks)
- c. How is the dictionary different from list? Assume a dictionary containing city and population as key and value respectively. Write a program to traverse the dictionary and display most populous city. (06 Marks)

OR

4. a. Explain the following string methods with example:  
i) join()    ii) islower()    iii) strip()    iv) center(). (08 Marks)
- b. Write a program to create a list of number and display the count of even and odd numbers in the list. (06 Marks)
- c. If S = 'Hello World', explain and write the output of the following statements:  
i) S[1:5]    ii) S[:5]    iii) S[3:-1]    iv) S[:] (06 Marks)

### Module-3

5. a. What is a regular expression? Explain the process of finding patterns of text with regular expressions and associated methods in Python with an example. (08 Marks)
- b. Explain the following patterns matching capabilities in python with suitable program snippets:
  - i) Grouping with parentheses
  - ii) Matching multiple groups
  - iii) Matching one or more. (06 Marks)
- c. Explain the following file operations in Python with suitable examples:
  - i) Copying files and folders
  - ii) Moving files and folders
  - iii) Permanently deleting files and folders. (06 Marks)

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**OR**

- 6 a. Explain with a suitable Python program how `findall()` is different from `search()` method. State the purpose of any four short hand character classes with examples. (08 Marks)
- b. What is the difference between OS and OS.path modules? Discuss the following four methods of OS module:  
 i) `chdir()`    ii) `walk()`    iii) `listdir()`    iv) `getcwd()` (06 Marks)
- c. With code snippets, explain reading, extracting and creating ZIP files in Python. (06 Marks)

**Module-4**

- 7 a. What is class? How do we define class? How to instantiate the class and members are accessed? (08 Marks)
- b. Write a Python program to add and multiply two complex number objects using operator overloading concepts. (06 Marks)
- c. Discuss type-based dispatch in a Python. (06 Marks)

**OR**

- 8 a. Explain `__init__` and `__str__` methods, with an example. (08 Marks)
- b. What is pure function? Illustrate the same with an example. (06 Marks)
- c. Explain concept of polymorphism with suitable example. (06 Marks)

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**Module-5**

- 9 a. What is Web Scraping? Explain the process of downloading the file from web and saving downloaded files. (08 Marks)
- b. Explain the process of reading cells from EXCEL sheets. (06 Marks)
- c. With a code snippet, discuss how to change the text style of .doc file using paragraph and run objects. (06 Marks)

**OR**

- 10 a. How do we extract, decrypt, copy and encrypt PDF files in Python. (08 Marks)
- b. Discuss the process of creating a beautiful soup object and finding an element from HTML. (06 Marks)
- c. With an example, illustrate the use of JASON module in Python. (06 Marks)

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# CBCS SCHEME

USN

18CS55



## Fifth Semester B.E. Degree Examination, July/August 2021 Application Development using Python

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

- Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written e.g.  $42+8 = 50$ , will be treated as malpractice.
1. a. Explain string concatenation and string replication operator with an example. (05 Marks)  
b. Illustrate the use of break and continue with an example. (05 Marks)  
c. With the flow chart, explain the flow control statements while, for and elif. Write a python program to check whether the given number is positive, negative or zero. (10 Marks)
  2. a. What are functions? Define python function with parameter and return statement. Write a python function to generate the factorial of a number. (07 Marks)  
b. Explain local and global scope with suitable example. (05 Marks)  
c. Define exception handling. How exceptions are handled in python? Write a python program to solve divide by zero exception. (08 Marks)
  3. a. Explain negative indexing, slicing, index( ), append( ), insert( ) and sort( ) method with suitable example. (12 Marks)  
b. Write a python program to generate the following pattern using String center( ) method.  

```
-----*-----  
-----* * *-----  
--- * * * * * ---  
- * * * * * * -  
* * * * * * * *
```

(08 Marks)
  4. a. What is dictionary? How it differs from list? Write a program to count the number of occurrences of each character in string. (08 Marks)  
b. Define tuple data type. List out the differences between Tuple and list. Create a list of even numbers and convert it into a tuple. (06 Marks)  
c. Write the output of the following:
    - (i) 'Hello'.upper().isupper()
    - (ii) 'Hello'.upper().lower()
    - (iii) '-'.join ('There can be only one'.split())(06 Marks)
  5. a. Describe Greedy, Non greedy pattern matching and findall( ) method of Regex object with suitable code snippet. (07 Marks)  
b. Write a python program to demonstrate file reading and writing process. (06 Marks)  
c. List out the difference between shutil.copy( ) and shutil.copytree( ) method. Explain in brief move, rename is deleting files and folders in shutil module with example. (07 Marks)
  6. a. Write a python program to extract the American phone number (eg. 415-555-4242) and email in a given string using Regular Expressions. (06 Marks)  
b. Define assertions. Explain how assertions can be used in traffic light simulation with python code snippet. (07 Marks)  
c. List out the benefits of compressing a file. With code snippet, explain reading and extracting from a zip file. (07 Marks)

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- 7 a. Explain operator overloading with example. (07 Marks)  
b. Illustrate the concept of pure functions and modifier using python code. (10 Marks)  
c. Explain init( ) method with example. (03 Marks)
- 8 a. Define classes and objects in python. Create a class called Employee and initialize it with emp\_id, name and salary. Write the methods to set values for name, salary and display the employee details. (08 Marks)  
b. Illustrate the concept of inheritance with example. (06 Marks)  
c. Explain Type-based dispatch with example. (06 Marks)
- 9 a. What is JSON? Briefly explain the json module to read and write JSON data with code snippet. (07 Marks)  
b. Explain the process of downloading files from the web with the requests module and saving downloaded files to the hard drive with suitable examples. (08 Marks)  
c. Write short notes on encrypting pdf files. (05 Marks)
- 10 a. Explain how to retrieve a web page element from a BeautifulSoup object using select( ) Method. (10 Marks)  
b. Illustrate with example how do you create and save excel document. (05 Marks)  
c. With code snippet explain the process of reading data from a CSV file. (05 Marks)

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## Fifth Semester B.E. Degree Examination, Jan./Feb. 2021 Application Development using Python

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

### Module-1

1. a. Demonstrate with example print(), input() and string replication. (06 Marks)
- b. Explain elif, for, while, break and continue statements in python with examples for each. (10 Marks)
- c. Write a Python program to check whether a given number is even or odd. (04 Marks)

**OR**

2. a. How can we pass parameters in user defined functions? Explain with suitable example. (05 Marks)
- b. Explain local and global scope with local and global variables. (08 Marks)
- c. Demonstrate the concept of exception. Implement a code which prompts the user for Celsius temperature, convert the temperature to Fahrenheit, and print out the converted temperature by handling the exception. (07 Marks)

### Module-2

3. a. What is list? Explain append(), insert() and remove() methods with examples. (08 Marks)
- b. How is tuple different from a list and which function is used to convert list to tuple. (05 Marks)
- c. Create a function to print out a blank tic – tac – toe board. (07 Marks)

**OR**

4. a. Discuss get( ), item( ), keys( ) and values( ) Dictionary methods in python with examples. (08 Marks)
- b. With example code explain join() and split() string methods. (06 Marks)
- c. Develop a program to accept a sentence form the user and display the longest word of that sentence along with its length. (06 Marks)

### Module-3

5. a. What are regular expression? Describe question mark, star, plus-and dot Regex symbols with suitable python code snippet. (09 Marks)
- b. With code snippet, explain saving variables using the shelve module and PPrint Pformat( ) functions. (06 Marks)
- c. Write a program that reads a string with five characters which starts with 'a' and ends with 'z'. Print search successful if pattern matches string. (05 Marks)

**OR**

6. a. Explain functions of Shutil Module with examples. (08 Marks)
- b. Explain buttons in the Debug control widow. (05 Marks)
- c. What is meant by compressing files? Explain reading, extracting and creating ZIP files with code snippet. (07 Marks)

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**Module-4**

- 7 a. What is class, object, attributes. Explain copy.copy() with an example. (06 Marks)  
b. Demonstrate pure functions and modifiers with examples. (08 Marks)  
c. Use the datetime module to write a program that gets the current date and prints that day of the week. (06 Marks)

**OR**

- 8 a. Explain operator overloading and polymorphism with examples. (08 Marks)  
b. Illustrate the concepts of inheritance and class diagrams with examples. (08 Marks)  
c. Write a function called print\_time that takes a time object and print it in the form hour : minute : second. (04 Marks)

**Module-5**

- 9 a. Explain parsing HTML with the BeautifulSoup Module with code snippet for creating finding an element and getting data. (09 Marks)  
b. What methods do Selenium's web element object have for simulating mouse clicks and keyboard keys. Explain with python code snippet. (06 Marks)  
c. Write a python program to access cell in a worksheet. (05 Marks)

**OR**

- 10 a. Write a program to get a list of all files with the pdf extension in the current working director and sort them. (06 Marks)  
b. Demonstrate the json module with python program. (06 Marks)  
c. What are the advantages of CSV files? Explain the Reader objects and Writer objects with python code. (08 Marks)

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