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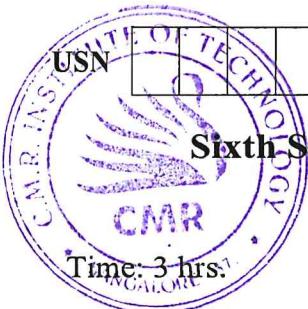
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CBCS SCHEME



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15CS664

Sixth Semester B.E. Degree Examination, July/August 2022

Python Application Programming

Time: 3 hrs.

Max. Marks: 80

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

Module-1

1. a. Explain Computer Hardware Architecture with neat diagram. (05 Marks)
- b. Explain in detail the building blocks of a program. State the need for functions in Python. (05 Marks)
- c. Explain Syntax errors, logic errors and semantic errors. List out the differences between compiler and interpreter. (06 Marks)

OR

2. a. Explain keywords, variable names with rules, operators, operands and order of operations in Python with examples. (08 Marks)
- b. Explain the concept of short circuit evaluation of logical expression in Python. Write a program to prompt the user for a score between 0.0 and 1.0. If the score is out of range print an error. If the score is between 0.0 and 1.0. Print a grade using the following table:

Score	Grade
≥ 0.9	A
≥ 0.8	B
≥ 0.7	C
≥ 0.6	D
≥ 0.5	F

Use try and Except so that your program handles non-numeric input gracefully by printing a message and exit the program. (08 Marks)

Module-2

3. a. Explain string slices, string methods, format operator with examples in Python. (06 Marks)
- b. Write a program which prompts the user for a Celsius temperature, convert the temperature to Fahrenheit and print out the converted temperature. (05 Marks)
- c. Explain break and continue statements with examples in Python. (05 Marks)

OR

4. a. "Strings in Python are immutable". Explain this statement with example. Write pythonic code to find the factorial of any number entered by the keyboard. (08 Marks)
- b. Explain with a neat diagram, a file handling operations in Python. Write a Python program to read the file, count and print the lines that start with the word "From". Prompt the user for the file name. (08 Marks)

Module-3

5. a. Explain list operations and methods in Python. "List are mutable". Explain this statement with example. (08 Marks)
- b. How are dictionaries and tuples used together? Demonstrate the use of tuple assignment with dictionaries to traverse the keys and values of dictionary. (08 Marks)

OR

- 6 a. Define tuple. Explain DSU pattern. (06 Marks)
 b. Why do you need regular expressions in Python? Write a program to look for lines of the form New Revision : 39772
 And Extract the number from each of the lines using a regular expression and the find all () method. Compute the average of the numbers and print out the average. (10 Marks)

Module-4

- 7 a. Explain Polymorphism in Python in detail with examples. (08 Marks)
 b. What is Operator overloading? Write pythonic code to overload "+", "-" and "*" operators by providing the methods `_add_`, `_sub_` and `_mul_`. (08 Marks)

OR

- 8 a. Explain `init` method and `__str__` method? Write a `str` method for the point class. Create a point object and print it. (08 Marks)
 b. What are classes and objects in Python? Explain attributes and object diagram with an example. (08 Marks)

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Module-5

- 9 a. Define Socket. Show and explain with neat diagram, Socket connection. Write a Python program to retrieve an image over HTTP. (10 Marks)
 b. State the need for Urllib in Python. Explain why data is retrieved in blocks. (06 Marks)

OR

- 10 a. Define XML. Construct a simple XML document and represent it with a diagram. Write Python code to loop through XML nodes in the document. (08 Marks)
 b. Define JSON. Construct a simple JSON document. Bring out the differences between XML and JSON. Write Python code to Parse JSON document. (08 Marks)

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15CS664

Sixth Semester B.E. Degree Examination, July/August 2021 Python Application Programming

Time: 3 hrs.

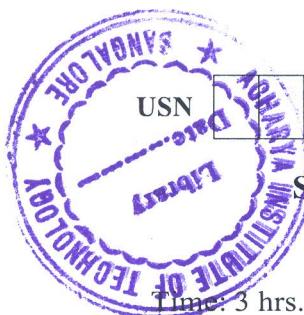
Max. Marks: 80

Note: Answer any FIVE full questions.

- 1 a. Compare and contrast compiler and interpreter. (04 Marks)
b. Explain the hardware architecture of computer with a neat sketch. (06 Marks)
c. Write a python program to find arithmetic operations (+, -, *, / and %) of two numbers using functions by getting two numbers through key board. (06 Marks)
- 2 a. Explain conditional execution in python (if..., if.... else, if elifelse) with examples. (06 Marks)
b. Explain floor division (//), modulo division (%) and division (/) with examples. (04 Marks)
c. Find the greatest of three numbers (without using and operator) by getting 3 numbers through keyboards using function. (06 Marks)
- 3 a. Elucidate the role of secondary memory with a neat sketch. (04 Marks)
b. Explain the different exceptions in python and write syntaxes to handle them. (06 Marks)
c. Write a python program to count number of the occurrences of a word in a text file. (06 Marks)
- 4 a. Explain string data structure in Python for indexing the element of string (both positive and negative indexing) for the string ‘Hello’ with different string slicing operations. (05 Marks)
b. Elucidate different file handling functions in python with examples. (05 Marks)
c. Write a Python program for handling divide by zero exception using try and except. (06 Marks)
- 5 a. Describe mutable and immutable objects with examples. (04 Marks)
b. How will you perform the following operations in the List – L = [‘d’, ‘a’, ‘c’, ‘b’]
→ To add the element ‘e’ in L
→ To delete the element ‘c’ from L
→ To join another List L1 = [‘x’, ‘y’, ‘z’] with L. (06 Marks)
c. Discuss the lists handling functions in python with example. (06 Marks)
- 6 a. How to swap the values of two variables using a single statement in python. (02 Marks)
b. Explain search () and findall () in Regular expression with examples. (08 Marks)
c. Write a python program to read a list of words from a string and sort them and print in the order of longest to shortest words. (06 Marks)

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 eg. $42+8 = 50$, will be treated as malpractice.

- 7 a. Define operator overloading. (02 Marks)
b. Elucidate the initialization of method with an example. (08 Marks)
c. Write an operator overloading program in python to set the values (3, 4) and (5, 7) into the point P₁ and P₂ respectively and perform P₁ + P₂ where + denotes addition of respective X and Y coordinates i.e (x₁ + x₂, y₁ + y₂). (06 Marks)
- 8 a. Implement the concept of pure function with an example. (08 Marks)
b. Write a python program to create class Employee which has a parameterized constructor initializing name, salary and a method Display () for displaying name and salary of the employees. Invoke the constructor with the data of 'Zara' and 2000 and 'Sam' and 3000 and display them through Display () is main. (08 Marks)
- 9 a. Describe service oriented Architecture with a neat sketch. (08 Marks)
b. Write a python program to make SQLite connection with database called music.sqlite and insert two records of singer_Id and singer_name and display them on console. (08 Marks)
- 10 a. Write a python program to delete a particular record singer_Id = 100 from the database mentioned in Q9(b) and update the record singer_Id = 101 with singer_name = 'vijay'. (08 Marks)
b. Develop a world simplest web browser which makes a connection to a web server and follows rules of the HTTP protocol to request a document and display what the server sends back using python program. (08 Marks)



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Sixth Semester B.E. Degree Examination, Jan./Feb. 2021 Python Application Programming

Time: 3 hrs.

Max. Marks: 80

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

Module-1

1. a. Explain the computer hardware architecture with a neat sketch. (06 Marks)
- b. Write a note on general types of errors. (06 Marks)
- c. Write a program that uses input to prompt a user for their name and then welcomes them. (04 Marks)

OR

2. a. Write a program which prompts the user for a Celsius temperature, convert the temperature to Fahrenheit and print the converted temperature. (06 Marks)
- b. Explain nested conditional statement with an example. (04 Marks)
- c. Write a program with a function computer grade that takes a score as its parameter and returns a grade as a string. (06 Marks)

Module-2

3. a. Analyze the use of break and continue statement with an example. (06 Marks)
- b. Explain format operators in python with suitable examples. (03 Marks)
- c. Define a file data structure. Illustrate reading and writing operation on files with examples. (07 Marks)

OR

4. a. Write a program to read numbers repeatedly until the user enters 'done'. Once 'done' is entered print out total, count and average of the numbers. (06 Marks)
- b. Write a note on string methods. (07 Marks)
- c. Write a program to read through a file and print the contents of the file (line by line) all in upper case. (03 Marks)

Module-3

5. a. Explain list operations and list methods with examples. (05 Marks)
- b. Write a program to count how many times each letter appears in a word. (07 Marks)
- c. Explain tuple assignment with examples. (04 Marks)

OR

6. a. Write a program to open a file and read it line by line. For each line, split the line into list of words using split function. For each word check to see if the word is already in a list. If the word is not in the list, add it to the list. (06 Marks)
- b. Explain advanced text parsing using dictionary. (07 Marks)
- c. Why search and find all functions of regular expressions used? Explain with suitable examples. (03 Marks)

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Module-4

- 7 a. Define class. Explain classes and objects of python in detail with suitable examples. (10 Marks)
b. What is a pure function? Explain with an example. (06 Marks)

OR

- 8 a. Write a program with a function print_time that takes a time object and prints it in the form hour:minute:second. Write another function is_after that takes two time objects t_1 and t_2 and resume True if t_1 follows t_2 chronologically and False otherwise. (08 Marks)
b. Write a note on operator overloading with an example. (08 Marks)

Module-5

- 9 a. How to retrieve web pages using urllib? Explain how to compute frequency of each word in the file retrieved. (08 Marks)
b. What is an API? Explain with a neat sketch. (08 Marks)

OR

- 10 a. Write a program to read binary files. (08 Marks)
b. Explain keys in a database model. (08 Marks)



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17CS664

Sixth Semester B.E. Degree Examination, Jan./Feb. 2021 Python Application Programming

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Explain the skills necessary for a programmer. What is the difference between a compiler and an interpreter? (10 Marks)
- b. Explain three general types of errors encountered in python programs. Give example for each error. If occurred how do you handle them? (10 Marks)

OR

- 2 a. Write the rules of precedence followed when there is more than one operator appears in the evaluation of expression. Give two examples. (10 Marks)
- b. i) Write a program to compute gross pay by accepting hours and rate per hour from user.
ii) Write a program to convert temperature from Celsius to Fahrenheit. (10 Marks)

Module-2

- 3 a. Write a program to print the grade based on the score input from user using a function called "Compute grade".

Score	Grade
< = 0.6	F
> 0.6	D
> 0.7	C
> 0.8	B
> 0.9	A

(10 Marks)
- b. Write a program which repeatedly reads numbers until the users enters "done". Once "done" is entered, print out the total, count and average of the numbers. If the user enters anything other than a number, detect their mistake using 'try' and 'except' and print an error message and skip to the next number. (10 Marks)

OR

- 4 a. Explain definite loops in python. With example explain the significance of 'break' and 'continue' statements. (10 Marks)
- b. Write a program to extract user's domain address (vct.ac.za) from the below string.
"From stephen.marquard@vct.ac.za sat Jan 5 09:14:16 2008" (05 Marks)
- c. Explain the use of 'append' and 'extend' list methods. (05 Marks)

Module-3

- 5 a. Is strings immutable? Justify your answer with suitable examples. Explain string slicing. (10 Marks)
- b. i) Write a program to read through a file and print the contents of the file (line by line) all in upper case. (05 Marks)
- ii) Write a program to count the number of words in the given file. (05 Marks)

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OR

- 6 a. What are Dictionaries?? How to use Dictionary as a set of counter? Explain with example. (10 Marks)
b. Write a program to count the occurrences of words in a given file using dictionaries. (10 Marks)

Module-4

- 7 a. Write a program to sort the contents of a dictionary based on the value. Assume necessary dictionary data. (10 Marks)
b. Explain search() and findall() regular expression methods with suitable example. (10 Marks)

OR

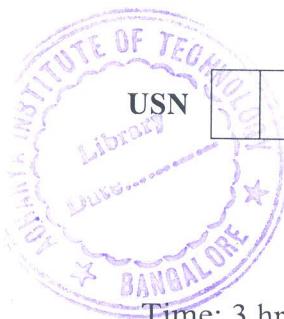
- 8 a. With the help of an object diagram and suitable example explain how do you achieve copying an object in python. Explain shallow copy and deep copy. (10 Marks)
b. Write a note on pure functions. (10 Marks)

Module-5

- 9 a. Explain connect, cursor, execute APIs used to interact with SQLite database. (10 Marks)
b. Write a python program to insert and display data in ‘student-info’ table of SQLite database. Assume necessary attributes. (10 Marks)

OR

- 10 a. How do you parse XML and JSON objects in python? Explain with example. (10 Marks)
b. With the help of code snippet explain how do you parse HTML and extract data using beautiful soup library. (10 Marks)



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15CS664

Sixth Semester B.E. Degree Examination, Aug./Sept. 2020

Python Application Programming

Time: 3 hrs.

Max. Marks: 80

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

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 eg, $42+8=50$, will be treated as malpractice.

Module-1

1. a. Explain types of error with examples. (04 Marks)
- b. Explain various Names, Keywords and expressions with examples. (06 Marks)
- c. Write a python program using try and except, so that your program handles non-numeric input gracefully by printing a message and exiting the program the following shown two execution of the program
Enter Hours : 20
Enter Rate : nine
Error, please enter numeric input
Enter hours : forty
Error, please enter numeric input. (06 Marks)

OR

2. a. Explain conditional execution, Alternative execution chained conditionals and nested conditionals with examples. (08 Marks)
- b. Explain break and continue statement with examples in python. (04 Marks)
- c. Explain with an example what are fruitful functions and void functions. (04 Marks)

Module-2

3. a. Explain while and for loops with examples. (04 Marks)
- b. Write a python program to find the largest value from the given set of accepted values. (06 Marks)
- c. Discuss the string handling methods in python with examples. (06 Marks)

OR

4. a. Write a python program to check whether a given string is palindrome or not. (06 Marks)
- b. Explain with example the syntax of read(), write() methods for a file. (04 Marks)
- c. Develop a python program for creating a copy an existing file. (06 Marks)

Module-3

5. a. Explain the difference between a list and a dictionary. (04 Marks)
- b. Make a list of first ten letters of the alphabet then using the slice operation do the following:
 i) Print the first three letters from the list
 ii) Print any three letters from the middle
 iii) Print the letters from 5th letters to the end of the list. (04 Marks)
- c. Discuss the lists handling functions in python with example. (08 Marks)

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OR

- 6 a. Differentiate between list and dictionary. (08 Marks)
b. Define tuple, explain DSU pattern. Write a python code to determinate tuples by sorting a list of words from longest to shortest using loops. (04 Marks)
c. Explain the need of Regular expressions in python language. (04 Marks)

Module-4

- 7 a. Explain classes and attributes in python language with examples. (05 Marks)
b. Explain pure functions and modifiers with examples. (05 Marks)
c. Write a program that uses class to store the name and marks of students. Use list to store the marks in three subjects. (06 Marks)

OR

- 8 a. Explain initialization method with example. (04 Marks)
b. Write a class Rectangle that has attributes length and breadth and a method area which returns the area of the rectangle. (06 Marks)
c. What is operator overloading? Write python code to overload “+” “-” and “*” operator by providing the methods __add__, __sub__ and __mul__. (06 Marks)

Module-5

- 9 a. Write a python code for retrieving the romeo.txt file from the web and compute the frequency of each word in the file. (06 Marks)
b. Write a note on XML. (05 Marks)
c. Explain with a neat diagram of Service Oriented Architecture. (05 Marks)

OR

- 10 a. Describe creation of database table using database cursor architecture. (08 Marks)
b. Write a python code for creating employee database, inserting records and selecting the employees working in the company. (08 Marks)



Sixth Semester B.E. Degree Examination, Dec.2019/Jan.2020
Python Application Programming

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. Explain the salient features of python. (05 Marks)
 b. Write a python program to calculate the area of square, rectangle and circle. Print the results. Take input from user. (05 Marks)
 c. What are user defined functions? How can we pass parameters in user defined functions? Explain with suitable example. (06 Marks)

OR

- 2 a. Explain the concept of conditional execution alternate execution and chained conditions with suitable examples. (06 Marks)
 b. Write a python program to create a user defined function to find maximum and minimum letter in string. Also find the length the string without using inbuilt function. (05 Marks)
 c. Explain the concept of type conversion functions and math functions in python with examples. (05 Marks)

Module-2

- 3 a. Explain the working of while loop in python with suitable example. (05 Marks)
 b. Write a python program to demonstrate counting, summing and average of elements using loops. (05 Marks)
 c. What is a string? Write a python program to demonstrate traversal through a string with a loop. Also explain the concept of string slicing. (06 Marks)

OR

- 4 a. With syntax and example code, explain the working of definite loop in python. (05 Marks)
 b. Write a python program to concatenate and compare two strings. Read the strings from user. (05 Marks)
 c. Explain fileopen, fileclose, fileread and filewrite concepts in python with example. (06 Marks)

Module-3

- 5 a. What is a list? Explain the concept of list slicing and list traversing with example. (05 Marks)
 b. Explain the concept of comparing tuples. Describe the working of sort function with python code. (06 Marks)
 c. Write a python program to search for lines that start with 'F' followed by 2 characters, followed by 'm:'. (05 Marks)

OR

- 6 a. What is dictionary? How is it different from list? Write a python program to count occurrence of characters in a string and print the count. (06 Marks)
 b. With an example program, illustrate how to pass function arguments to list. (05 Marks)
 c. Write a python program to search lines that start with 'X' followed by any non whitespace characters, followed by ':' ending with number. Display the sum of all these number. (05 Marks)

Module-4

- 7 a. Define class and object? What are programmer defined types? Explain with example. (05 Marks)
b. Illustrate the concept of pure function with python code. (05 Marks)
c. What is the difference between method and function? Explain the working of init method with suitable code. (06 Marks)

OR

- 8 a. Define attribute? With the help of python code, explain how functions return instance values. (06 Marks)
b. Explain the concept of modifier with python code. (05 Marks)
c. What is type based dispatch? Illustrate with python example. (05 Marks)

Module-5

- 9 a. Define socket? Write a python program that makes a connection to a webserver and follows the rules of HTTP protocol to request a plain test document and display what server sends back. (06 Marks)
b. What is XML? How is it used in python? Explain parsing of XML with example. (05 Marks)
c. Define cursor? Explain connect, execute and close command of databases with suitable example. (05 Marks)

OR

- 10 a. Write a python code to read the file from web using urelib and retrieve the data of the file. Also compute the frequency of each word in the file. (06 Marks)
b. What is JSON? Illustrate the concept of parsing JSON python code. (05 Marks)
c. Explain the concept of using JOIN to retrieve data in python. (05 Marks)

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15CS664

Sixth Semester B.E. Degree Examination, June/July 2019
Python Application Programming

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. List the features of Python Programming Language (at least FIVE). (05 Marks)
 b. What is the role of a programmer? List two skills required to be a programmer. (05 Marks)
 c. Explain the chained and nested conditional execution statements along with syntax and flow chart. (06 Marks)

OR

- 2 a. What are Python words and sentences? Explain with an example for each. (04 Marks)
 b. Differentiate compiler and interpreter. (04 Marks)
 c. Write python programs to i) Find largest of three numbers
 ii) Check whether the given year is leap year or not with functions. (08 Marks)

Module-2

- 3 a. With syntax, explain the finite and infinite looping constructs in python. What is the need for break and continue statements. (08 Marks)
 b. Write a Python program to generate and print prime numbers between 2 to 50. (04 Marks)
 c. What are String slices? Explain the slicing operator in Python with examples. (04 Marks)

OR

- 4 a. Write a Python program to count the number of occurrences of a given word in a file. (06 Marks)
 b. Write a Python function that takes decimal number as input and convert that to binary equivalent and return the same. (04 Marks)
 c. List any six methods associated with strings and explain each of them with an example. (06 Marks)

Module-3

- 5 a. What are the ways of traversing a list? Explain with an example for each. (04 Marks)
 b. Differentiate Pop and Remove methods on lists. How to delete more than one element from a list. (06 Marks)
 c. Write a Python program that accepts a sentences and build dictionary with LETTERS, DIGITS , UPPER CASE , LOWER CASE as key values and their count in the sentences as values. Ex : Sentence = "VTU@123.e-Learning"

$$d = \{"LETTERS": 12, "DIGITS": 3, "UPPER CASE": 4, "LOWER CASE": 8\}.$$
 (06 Marks)

OR

- 6 a. Compare and contrast lists and tuples. (04 Marks)
 b. Write a program to check the validity of a password read by users. The following criteria should be used to check the validity. Password should have atleast
 i) One lower case letter ii) One digit iii) One upper case letter
 iv) One special character from [\$ # @ !] v) Six character.
 Your program should accept a Password and check the validity using above criteria and print "valid" or "invalid" as the case may be. (08 Marks)

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- c. Demonstrate i) how a dictionary items can be represented as a list of tuples.
ii) How tuples can be used as keys in dictionaries? (04 Marks)

Module-4

- 7 a. What is a Class? How to define a class in Python? How to instantiate a class and how the class members are accessed? (04 Marks)
b. Differentiate class variables and instance variables. (02 Marks)
c. Write a Python program that uses datetime module within a class, takes a birthday as input and prints the age and the number of days , hours, minutes and seconds until the next birthday. (10 Marks)

OR

- 8 a. Write a program that has a class Point with attributes as X and Y co-ordinates. Create two objects of this class and find the midpoint of both the points. Add a method reflex_x to class point, which returns a new point. Which is the reflection of the point about the x – axis.
Ex : point (5, 10) ⇒ reflex_x returns point (5, -10). (06 Marks)
b. Differentiate between simple, multiple and multi – level inheritance. (06 Marks)
c. Write a program that has a class Person , Inherit a class Student from Person which also has a class MarksAttendance. Assume the attributes for Person class as : USN, Name, dob, gender. Attributes for Student class as : Class , branch , year , MA. Attributes for MarksAttendance : Marks, Attandance. Create a student S = Student ("1AB16CS005" , "XYZ" , "18-1-90" , "M" , 85 , 98) and display the details of the student. (04 Marks)

Module-5

- 9 a. Demonstrate with the help of Python construct i) how to retrieve an image over HTTP.
ii) how to retrieve web pages with urllib. (08 Marks)
b. Compare and contrast the JavaScript object Notation (JSON) and XML. (04 Marks)
c. What is Service – Oriented Architecture? List the advantages of the same. (04 Marks)

OR

- 10 a. Write a Python program that retrieve an user's Twitter friends , Parse the returned JSON and extract some of the information about the friends. (08 Marks)
b. Create a simple spidering program that will go through Twitter accounts and build a database of them. (08 Marks)

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15CS664

Sixth Semester B.E. Degree Examination, Dec.2018/Jan.2019
Python Application Programming

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. Explain the following :
 - i) Skills necessary for a programmer
 - ii) Interactive mode
 - iii) Short circuit evaluation of expression
 - iv) Modulus operator(04 Marks)
- b. Mention three types of errors encountered in python programs. Explain the basic building block of python with an example python program to display format number ($F_n = 2^{2n} + 1$) for a 'n' value promoted by the users. (08 Marks)
- c. Describe python language support for arithmetic operators. Write a python programs to calculate student result based on 2 exam, 1 sport event and 3 activities conducted in a college with weightage of the activity = 20% and sports = 20% for 50 marks. (04 Marks)

OR

- 2 a. List and give syntax of all python supported conditional statements along with its usage with an example program to check whether given number is positive or negative or zero. (08 Marks)
- b. Differentiate between argument and parameter. Illustrate the flow of execution of a python function with an example program to convert given Celsius to Fahrenheit temperature. (08 Marks)

Module-2

- 3 a. Explain while and for loop write a program to generate Fibonacci series up to the given limit by defining FIBONACCI (n) function. (08 Marks)
- b. Mention the advantages of continue statement. Write a program to compute only even numbers sum within the given natural number using continue statement. (08 Marks)

OR

- 4 a. Define a string. How it can be traversed though using looping statement? Write a python program to display presence of given substring in main string. (08 Marks)
- b. How computational fault or computational errors are handled in python? Show it with an example python program to copy all lines beginning with vowels from FROM.text file to VOWELTEXT.text file retaining other lines. (08 Marks)

Module-3

- 5 a. Describe any two list operations and list methods. Write a python program to accept 'n' numbers from user, find sum all even numbers and product of all odd numbers in entered list. (08 Marks)
- b. List merits of dictionary over list. Write a python program to accept USN and marks obtained, find maximum, minimum and students USN who have scored in the range 100-85, 85-75, 75-60 and below 60 marks separately. (08 Marks)

OR

- 6 a. Compare and contrast tuples with lists. Explain the following operations in tuples
i) Sum of two tuples
ii) Slicing operators
iii) Compression of two tuples
iv) Assignments to variables. (08 Marks)
- b. Explain extracting data using regular expressions. Implement a python program to find for lines having '@' sign between characters in a read text file. (08 Marks)

Module-4

- 7 a. How class can be instantiated in python? Write a python program to express instances as return values to define a class RECTANGLE with members width, height, corner_x, corner_y and member function : to find centre, area and perimeter of a rectangle. (08 Marks)
- b. Explain init and str method with an example python program. (08 Marks)

OR

- 8 a. Define polymorphism. Demonstrate polymorphism with function to find histogram to count the numbers of times each letters appears in a word and in sentence. (08 Marks)
- b. What is a pure function? Write a python program to find duration of event if start and end time is given by defining class TIME. (08 Marks)

Module-5

- 9 a. Explain any 2 socket functions. Explain support for parsing HTML using regular expression with an example program. (08 Marks)
- b. Describe a support of security mechanism employed in Internet application with support of API usage with an example program to get four strings and put them in "hidden.PY". (08 Marks)

OR

- 10 a. Write a note on XML. Design python program to retrieve a node present in XML tree. (08 Marks)
- b. Brief on structured Query language, with suitable python program explain functions involved in creation of database table in python. (08 Marks)

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CBCS SCHEMEUSN

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15CS664

Sixth Semester B.E. Degree Examination, June/July 2018
Python Application Programming

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing one full question from each module.**Module-1**

- 1 a. List the rules to declare a variable in Python. Demonstrate atleast three different types of variable uses with an example program. (05 Marks)
 b. Explain the rules of precedence used by Python to evaluate an expression. (05 Marks)
 c. Write a Python program to find the best of two test average marks out of three test's marks accepted from the user. (06 Marks)

OR

- 2 a. How Python handles the exceptions? Explain with an example program. (05 Marks)
 b. Write a single user defined function named 'Solve' that returns the Remainder and Quotient on division of two numbers accepted from the user. Print the Remainder and Quotient separately on the console. (06 Marks)
 c. Predict the output and justify your answer : (i) $-11 \% 9$ (ii) $7.7 // 7$ (iii) $(200 - 70) * 10 / 5$ (iv) not "False" (v) $5 * 1 ** 2$ (05 Marks)

Module-2

- 3 a. Demonstrate the use of break and continue keywords in looping structures using a snippet code. (06 Marks)
 b. Explain string slicing in Python. Show with examples. (04 Marks)
 c. Write a Phyto program to accept a sentence from the user and display the longest word of that sentence along with its length. (06 Marks)

OR

- 4 a. List and explain any four built in string manipulation functions supported by Python. (06 Marks)
 b. Write the Python code to display the last six characters of the string "Make hay while the sun shines" to the console. (03 Marks)
 c. Write a Pytho program to accept a file name from the user:
 (i) Display the first N-lines of the file.
 (ii) Find the frequency of occurrence of the word accepted from the user in the file. (07 Marks)

Module-3

- 5 a. What are lists? Lists are mutable. Justify the statement with examples. (05 Marks)
 b. How tuples are created in Python? Explain different ways of accessing and creating them. (05 Marks)
 c. Write a Pytho program to read all the lines in a file accepted from the user and print all email addresses contained in it. Assume the email addresses contain only non-white space characters. (06 Marks)

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OR

- 6 a. Implement a Python program using Lists to store and display the average of N integers accepted from the user. (05 Marks)
b. Explain dictionaries. Demonstrate with a Python program. (05 Marks)
c. Write a Python program to search for lines that start with the word 'From' and a character followed by a two digit number between 00 and 99 followed by ':' Print the number if it is greater than zero. Assume any input file. (06 Marks)

Module-4

- 7 a. Create a student class and initialize it with name and roll number. Design methods to:
(i) Display_to display all information of the student.
(ii) setAge_to assign age to student.
(iii) setMarks_to assign marks to the student. (07 Marks)
b. Using datetime module write a program that gets the current date and prints the day of the week. (04 Marks)
c. What are polymorphic functions? Explain with a snippet code. (05 Marks)

OR

- 8 a. What does the keyword self in Python mean? Explain with an example. (05 Marks)
b. Show using a Python code how __init__ method is invoked when an object is initiated. Explain its working. (06 Marks)
c. Explain __str__ method with a Python program. (05 Marks)

Module-5

- 9 a. What is socket? Explain how socket connection can be established to the internet using Python code over the TCP/IP connection and the http protocol to get the web document. (08 Marks)
b. Explain the significance of XML over the web development. Illustrate with an example. (08 Marks)

OR

- 10 a. Write a note on Google Geocoding web service. Using Python supported libraries, demonstrate with a Snippet code. (08 Marks)
b. What is embedded SQL? Explain the importance of SQLite database. Write a Python code to establish a database connection to 'EmpDb' and display the total gross salary paid to the employees working in the 'Quality Control' department. Assume the employee table has been already created and exist in the 'EmpDb'. The fields of Employee table are : (EmpID, DeptName, GrossSalary) (08 Marks)

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