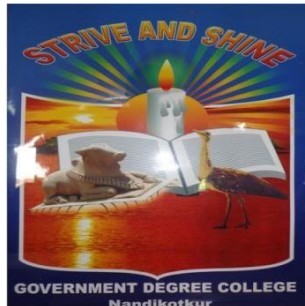


GOVT. DEGREE COLLEGE

NANDIKOTKUR- AP



QUESTION BANK

III YEAR B.Sc (MPCs)- VI SEMESTER

PYTHON PROGRAMMING (PP)

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Lecturer in Computer Science

Unit 1.

1. Explain the different string formats available in Python with examples. 5 Marks
2. Discuss the int(), float(), str(), chr() and complex() type conversion functions with examples. 5 Marks
3. Discuss the ord(), hex(), oct(), complex() and float() type conversion functions with examples. 5 Marks
4. Describe the **is** and **is not** operators and type() function. Also, discuss why Python is called as dynamic and strongly typed language. 5 Marks
5. Illustrate the different types of control flow statements available in Python with flowcharts. 5 Marks
6. Write a Program to Prompt 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 6 Marks

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

7. Write a program to display the fibonacci sequences up to nth term where n is provided by the user. 7 Marks
8. Write a program to repeatedly check for the largest number until the user enters "**done**". 5 Marks
9. Write a program to find the sum of all Odd and Even numbers up to a number specified by the user. 6 Marks
10. Explain the need for **continue** and **break** statements. Write a program to check whether a number is prime or not. Prompt the user for input. 8 Marks
11. Describe the need for catching exceptions using try and except statements. 10 Marks
12. Describe the syntax for the following functions and explain with an example.
a) abs() b) max() c) divmod() d) pow() e) len() 5 Marks
13. Write Pythonic code to solve the quadratic equation $ax^2 + bx + c = 0$ by getting input for coefficients from the user. 8 Marks
14. Find the area and perimeter of a circle using functions. Prompt the user for input. 6 Marks
15. Write a Python program using functions to find the value of nPr and nCr without using inbuilt factorial() function. 8 Marks
16. Write a program to print the sum of the following series $1 + 1/2 + 1/3 + \dots + 1/n$ 8 Marks

Unit 2.

1. Write Python program to replace comma-separated words with hyphens and print hyphen-separated words in ascending order. 5 Marks
2. Explain the need for Unicodes. 5 Marks
3. Discuss the following list functions
a) len() b) sum() c) any() d) all() e) sorted() 5 Marks
4. Explain the following list methods with an example. a) append() b) extend() c) insert() d) index() e) sort() 5 Marks
5. Check if the items in the list are sorted in ascending or descending order and print suitable messages accordingly. Otherwise, print "Items in list are not sorted" 7 Marks
6. Write Pythonic code to multiply two matrices using nested loops and also perform transpose of the resultant matrix. 8 Marks

Unit 3.

1. Write Python program to sort words in a sentence in decreasing order of their length. Display the sorted words along with their length. 7 Marks
2. Write a function which receives a variable number of strings as arguments. Find unique characters in each string. 6 Marks
3. Write Pythonic code to create a function called `most_frequent` that takes a string and prints the letters in decreasing order of frequency. Use dictionaries. 8 Marks
4. Consider the string 'brontosaurus'. Write Pythonic code that implements and returns the functionality of histogram using dictionaries for the given string. Also, write the function `print_hist()` to print the keys and their values in alphabetical order from the values returned by the histogram function. 8 Marks
5. Write Pythonic code that implements and returns the functionality of histogram using dictionaries. Also, write the function `print_hist` to print the keys and their values in alphabetical order from the values returned by the histogram function. 8 Marks

Unit 4.

1. Describe the different access modes of the files with an example. 6 Marks
2. Discuss the following methods associated with the file object
a) read() b) readline() c) readlines() d) tell() e) seek() f) write() 6 Marks
3. Write Python Program to Reverse Each Word in "secret_societies.txt" file. 6 Marks
4. Write Python Program to Count the Occurrences of Each Word and Also Count the Number of Words in a "quotes.txt" File. 7 Marks
5. Write Python Program to Find the Longest Word in a File. Get the File Name from User. 7 Marks

6. Consider a File Called “workfile”. Write Python Program to Read and Print Each Byte in the Binary File. 5 Marks

7. Write Python program to demonstrate the writing of data to a CSV file using DictWriter class. 6 Marks

8. Discuss the following methods supported by compiled regular expression objects.
a) search() b) match() c) findall() 6 Marks

9. Why do you need regular expressions in Python? Consider a file “ait.txt”. Write a Python program to read the file and look for lines of the form X-DSPAM-Confidence: 0.8475 X-DSPAM-Probability: 0.458 Extract the number from each of the lines using a regular expression. Compute the average of the numbers and print out the average. 8 Marks

10. Consider a line “From stephen.marquard@uct.ac.za Sat Jan 5 09:14:16 2008” in the file email.txt. Write Pythonic code to read the file and extract email address from the lines starting from the word “From”. Use regular expressions to match email address. 8 Marks

Unit 5.

1. Write Python program to calculate the Arc Length of an Angle by assigning values to the radius and angle data attributes of the class ArcLength. 7 Marks

2. Write Python Program to simulate a Bank Account with support for depositMoney, withdrawMoney and showBalance Operations. 8 Marks

3. Given three Points (x1, y1), (x2, y2) and (x3, y3), write a Python program to check if they are Collinear. 7 Marks

4. Discuss inheritance in Python programming language. Write a Python program to demonstrate the use of super() function. 10 Marks

5. Program to demonstrate the Overriding of the Base Class method in the Derived Class. 8 Marks

6. Write Python program to demonstrate Multiple Inheritance. 8 Marks

7. Given the Coordinates (x, y) of a center of a Circle and its radius, write Python program to determine whether the Point lies inside the Circle, on the Circle or outside the Circle. 8 Marks

8. Write Python Program to Demonstrate Multiple Inheritance with Method Overriding. 8 Marks

9. Write Pythonic code to overload “+”, “-” and “*” operators by providing the methods __add__, __sub__ and __mul__. 8 Marks

10. Write Pythonic code to create a function named **move_rectangle()** that takes an object of **Rectangle** class and two numbers named **dx** and **dy**. It should change the location of the Rectangle by adding dx to the x coordinate of corner and adding dy to the y coordinate of corner. 10 Marks