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Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Third Semester B.Tech (Minor) Degree Examination December 2024 (2023 Admission)

Course Code: CST283

Course Name: Python for Machine Learning

Max. Marks: 100 Duration: 3 Hours

PART A

Answer all questions. Each question carries 3 marks Marks

1	Give the output for the following expression evaluation in Python (i) -3**2 (ii) 2**4**2 (iii) 58%0		(3)
2	Explain the basic data types available in Python, with examples		(3)
3	What is mean by recursion. Explain with an example		(3)
4	Write a Python program to find the sum of all odd terms in a group of n numbers entered by the user.		(3)
5	Write a Python program to remove the characters at odd index positions in a string.		(3)
6	'Lists are mutable while tuples are immutable' Justify the statement.		(3)
7	Explain the concepts of classes, attributes and methods in Python, with suitable examples.		(3)
8	Explain polymorphism with example		(3)
9	What is Numpy? Why Numpy is faster than Lists		(3)
10	Write the difference between file methods readline() and readlines() with examples		(3)

PART B

Answer any one full question from each module. Each question carries 14 marks

Module 1

11	a)	Describe operators in Python	(8)
	b)	Explain software development process in detail	(6)
		OR	
12	a)	What are the key features of an interpreter and write short note on compilers	(8)
	b)	Identify all the invalid variable names from the following. Also give the reason (i) 4sum (ii) _sum@ (iii) for (iv) fori	(6)

Module 2

13 a) What will be the output of the following code and also write the output if 'continue' replaced with 'break' (8)

```
for i in range(3,12,2):
  if i==5:
    continue
  print (i, end="")
print ('Completed')
```

b) Write a python program to convert binary to decimal (6)

OR

14 a) WAP to count vowels and consonants in the string entered by user (6)

b) Write a Python function to compute the power of a number. Use the function to compute the sum of the series (1- x 2 /2 + x4 /4 - x 6 /6+.....n terms). (8)

Module 3

15 a) Write a program to find the top five common words from the sentence read from keyboard. (8)

b) Explain any three dictionary operations in Python. Give examples. (6)

OR

16 a) Write a Python program to read a list consisting of integers, floating point numbers and strings. Separate them into different lists depending on the data type (7)

b) What will be the output of the given code? (7)

```
v="Apple,orange,grapes"
list = v.split(",")
print("list:",list)
str='String operations in Python'
print(str[ :-3])
print(str[-5:-1])
```

Module 4

17 a) Write a program that repeatedly prompts a user for integer numbers until the user enters 'done'. Once 'done' is entered, print out the largest and smallest of the numbers. If the user enters anything other than a valid number catch it with a try/except and put out an appropriate message and ignore the number. (9)

b) Define a class Mobile to store the details of a mobile (company, model & price) with the following methods: (5)

i) set_details() - to set the values to the data attributes

ii) display_details() - to display the data attribute values.

Create an object of the class and invoke the methods.

OR

18 a) Write a short note on Exception handling (6)

b) Explain inheritance in Python. Give examples for each type of inheritance. (8)

Module 5

19 a) Write a Python program to read numbers from a file named, num.txt. Write all positive numbers from num.txt to file named positive.txt and all negative numbers to another file named negative.txt. (6)

b) Explain how to read a CSV file and write into a CSV file with example (8)

OR

20 a) Write a program to display the following data using Pandas. (9)

state	year	pop
Ohio	2000	1.5
Ohio	2001	1.7
Ohio	2002	3.6
Nevada	2001	2.4
Nevada	2002	2.9
Nevada	2003	3.2

i)Display the first 5 rows only

ii)Add a new column and enter data for that column and display the data

b) Write short notes on Python OS and SYS module (5)