H Roll No. .....

TCS–320

B. TECH. (CSE) (THIRD SEMESTER)
MID SEMESTER EXAMINATION, 2022

APPLICATION BASED PROGRAMMING
IN PYTHON

Time : 1½ Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing any ***one*** of the sub-questions.

(ii) Each question carries 10 marks.

1. (a) Explain about the various features of Python in depth. Also, explain the role of PVM with a proper diagram.

10 Marks (CO1)

OR

(b) List out the standard data types in Python while providing suitable Python code of each subtype. 10 Marks (CO1)

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2. (a) Write a python program to convert the {C_2H_5OH} chemistry expression into appropriate formula expression using maketrans and translate functions in Python. 10 Marks (CO1)

Output : C_2H_5OH

OR

(b) Write about the following with suitable Python code : 10 Marks (CO1)

(i) What are Python strings ? Explain slice( ) and s[::] methods to slice a string in half. Print both the halves of a string at the end.

(ii) What is the output of the program ?

```
b = "Hello, World!"
print(b[-4:-1:-1])
```

3. (a) 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 given ahead table : 10 Marks (CO2)

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

OR

(b) Explain the need for continue and break statements. Write a program to check whether a number is prime or not using square root approach. Prompt the user for input. Make sure to create your own square root calculator function instead of using inbuilt function. 10 Marks (CO2)

4. (a) Discuss the following list functions with suitable Python code : 10 Marks (CO2)

(i) len( )

(ii) sum( )

(iii) any( )

(iv) all( )

(v) sorted( )

OR

(b) Check if the items in the list are sorted in ascending or descending order and print suitable message accordingly. Otherwise, print "Items in list are not sorted."

10 Marks (CO2)

5. (a) Write a program to find the sum of all odd and even numbers upto a number specified by the user.

10 Marks (CO1 and CO2)

OR

(b) Discuss the following functions with suitable examples :

10 Marks (CO1 & CO2)

(i) int( ), float( ), str( ), chr( ) and complex( )

(ii) lower( ), upper( ), estrip( ), lstrip( ), strip( )