Total No. of Questions – [3]

Total No. of Printed Pages: 4

G.R. No.	

PAPER CODE	0111 – 202B (Backlog)

DECEMBER 2021 (INSEM+ ENDSEM) EXAM

F.Y. B. TECH. (SEMESTER - I)

COURSE NAME: PYTHON FOR ENGINEERS

COURSE CODE: [CS10202B]

(PATTERN 2020)

Time: [2Hr]

[Max. Marks: 60]

(*) Instructions to candidates:

1) **Figures to the right indicate full marks.**
2) **Use of scientific calculator is allowed**
3) **Use suitable data where ever required**

Q.1 **Solve the following** **[30]**

i) What is the output of the following string comparison [2]

```
print("John" > "Jhon")
print("Emma" < "Emm")
```

a) True
   False

b) False
   False

c) True
   True

d) False
   True

ii) What will be the output of the following Python code? [2]

```
a=[11,4,16,67,88,21,9]
a.sort(reverse=True)
print(a)
```

a)[4, 9, 11, 16, 21, 67, 88] b)[11, 4, 16, 67, 88, 21, 9]
c)[88, 67, 21, 16, 11, 9, 4] d)[9, 88, 67, 16, 21, 11, 4]

iii) What will be the output of the following Python code? [2]

```
a=[11,33,55,[77]]
b=list(a)
a[3][0]=99
a[1]=34
print(b)
```

a)[11, 33, 55, [99]] b) [11, 34, 55, [99]] c)[11, 33, 55, [77]] d) [11, 34, 55, [77]]

iv) What is the output of the following code [2]

```
print(bool(0), bool(3.14159), bool(-3), bool(1.0+1j))
```

a)True True False True b)False True True True
c)True False False True d)False True False True

v) What is the output of the following code [2]

```
T1 = (1, 2, 3, 4, 5, 6, 7, 8)
print(T1[-1 : -5 : -2])
print(T1[ : 7 : 2])
```

a) (8, 6)
   (3, 5, 7)

c) (8, 6)
   (1, 3, 5, 7)

b) (8, 6)
(1, 3, 5)
d) (8, 6,4)
(1, 3, 5)

vi) What is the output of the following code [2]

```
T1 = (23, 32, 4, 5, 2, 12, 23, 7, 9, 10, 23)
print(T1[T1.count(23) + len(T1) -5])
print(T1.count(T1[6]))
```

a) 10
1
c) 10
3
b) 11
3
d) 23
1

vii) What is the output of the following set operation. [2]

```
set1 = {"Yellow", "Orange", "Black"}
set2 = {"Orange", "Blue", "Pink"}
set1.update(set2)
print(set1)
```

a) {'Yellow', 'Black'} b) TypeError c) {'Yellow', 'Orange', 'Black', 'Blue', 'Pink', 'Orange'}
d) {'Orange', 'Black', 'Pink', 'Blue', 'Yellow'}

viii) Select the correct option to display : VIIT is Best! ,in the output [2]

```
R=[{'Pune':"VIIT","Course":'Python for Engineers'},
["Best!",5,["WELCOME","wow!","is"]]]
```

a)print(R[0]["Pune"],R[1][2][-1],R[1][0]) b) print(R[1]["Pune"],R[1][2][-1],R[1][1])
c) print(R[1]["Course"],R[1][2][-1],R[1][1]) d) none of the mentioned

ix) What will be the output of the following Python code? [2]

```
i = 1
while True:
  if i%9 == 0:
    break
  print(i,end=" ")
  i += 2
```

a)1 3 5 7 b) 1 3 5 7 9 c) error d) none of the mentioned

x) What will be the output of the following Python code? [2]

```
if False:
  print("India")
elif True:
  print("Pune is Best City!")
elif True:
  print("I like BMW")
else:
  print("See you Soon..")
```

a) India b) I like BMW c) Pune is Best City! d)See you Soon..

xi) What will be the output of the following Python code? [2]

```
i = 0
while i < 5:
  print(i,end=" ")
  i += 1
  if i == 3:
    break
else:
  print(0)
```

a)0 1 2 b) 0 1 2 3 4 c) error d) 0 1 2 3

xii) What will be the output of the following Python code? [2]

```
for num in range(10, 14):
  for i in range(2, num):
    if num%i == 1:
      print(num,end=" ")
      break
```

a)11 13 b) None of the mentioned c) error d) 10 11 12 13

xiii) What will be the output of the following Python code? [2]

```
def writer():
  title = 'Sir'
```

```
    name = (lambda x:title + ' ' + x)
    return name
who = writer()
who('Shree')
```

a)Shree Sir b) Sir Shree c) Shree d) None of the mentioned

xiv) What will be the output of the following Python code? [2]

```
min = (lambda x, y: x if x < y else y)
min(101*99, 102*98)
```

a) 9999 b) 9997 c) 9996 d) None of the mentioned

xv) What will be the output of the following Python code? [2]

mod1 and mod2 modules are imported in main file.

```
#mod1.py
def change(a):
   b=[x*2 for x in a]
   print(b)
#mod2.py
def change1(a):
   b=[x*x for x in a]
   print(b)
#main.py
from mod1 import change
from mod2 import change1
s=[1,2,3]
change1(s)
```

a)[2, 4, 6] b) [1, 4, 6] c) [1, 4, 9] d) None of the mentioned

Q.2 Solve any three out of four [15]

a) Define Numpy? [5]

Following is the provided NumPy array. Return array of items by taking the third column from all rows.

```
samA= numpy.array([[11 ,22, 33], [44, 55, 66], [77, 88, 99]])
Printing Input Array
samA= [[11 22 33]
       [44 55 66]
       [77 88 99]]
```

Expected Output: Printing array of items of the third column from all rows

```
[33 66 99]
```

b) Consider three arrays as below [5]

```
A = [[10,20,30],[11,22,33]]
B = [[66],[11]]
C = [[10,25],[5,10]]
```

Write a python code to perform (A+B) and (A+C)

Justify (A+B) and (A+C) Output with the help of broadcasting rules

c) Write a NumPy program to get the following expected output of array values element-wise. [5]

```
arr1=[10,12,16,24]
arr2=[2,4,8,9]
```

Expected Output:

```
A= [5 3 2 2]
B= [0 0 0 6]
```

d) Describe subplot? Write a python code to get sin, cosine and tan signal waves over the period (0,5*pi,0.1) using subplot. [5]

Q.3 **Solve any three out of four** [15]

a) Consider following lines for the file punecity.txt .Write a function count_lines() to count and display the total number of lines from the file. [5]

Input:
Pune, also called Poona, est Maharashtra state, at he junction of the Mula and Mutha rivers. Called "Queen of the Deccan".
Pune is the cultural capital of the Maratha peoples.
The city first gained importance as the capital of the Bhosale Marathas in the 17th century.

b) Explain in detail the modes used in text file for the following operations with the symbols . [5]

a) Read Only c)Write only
b) Read and Write d) Write and Read

Differentiate between write and append mode?

c) Consider following lines for the file engtest.txt and predict the output: [5]

Input:

1. A person who manufactures or designs any machines, devices, software, etc. is called an engineer.
2. There are many types of engineers, which all have different fields.
3. There are 4 major types of Engineers, Civil Engineer, Electrical Engineer, Mechanical Engineer, and Computer Engineer.
4. Engineering is the most preferred career option all over the world.

```
f = open("engtest.txt",'w')
f = open("engtest.txt")
l = f.readline()
print(l)
f.seek(9)
print(f.tell())
l2 = f.readline(10)
print(l2)
print(f.readline())
ch3=f.read(15)
print(ch3)
f.close()
```

d) Write a Python program to read a given .txt file and count total number of 'Python' word in the given file, find total words and total lines in the file. [5]

Input:
Python is an interpreted, object-oriented, high-level programming language with dynamic semantics.
Its high-level built in data structures, combined with dynamic typing and dynamic binding, make it very attractive for Rapid Application Development, as well as for use as a scripting or glue language to connect existing components together. Python's simple, easy to learn syntax emphasizes readability nance.
Python supports modules and packages, which encourages program modularity and code reuse.