Total No. of Questions – [3]

Total No. of Printed Pages: 4

G.R. No.	

PAPER CODE	U111-2028(RE)

May 2022 (INSEM+ ENDSEM) EXAM
F.Y. B. TECH. (SEMESTER - II)
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("python" > "PYTHON")
print("VIIT" < "viit")
```

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=[11,5,59,66,67,22,7,9]
a.sort(reverse=False)
print(a)
```

a) [11,5,59,66,67,22,7,9]
b) [5,7,9,11,22,59,66,67]
c) [11,59,5,66,67,22,9,7]
d) [67,66,59,22,11,9,7,5]

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

```
vowel_string = 'aeiou'
print(list(vowel_string))
c_dictionary = {'b': 1, 'c': 2, 'd': 3, 'f':4, 'g':5}
print(list(c_dictionary))
```

a) ['a', 'e', 'i', 'o', 'u']
   ['b', 'c', 'd', 'f', 'g']

b) ['aeiou']
   ['b', 'c', 'd', 'f', 'g']

c) ['a', 'e', 'i', 'o', 'u']
   [1, 2, 3, 4, 5]

d) ['aeiou']
   [1, 2, 3, 4, 5]

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

```
print(bool(3), bool(3.14159), bool(0), 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, 9, 100)
print(T1[-1 : -5 : -2])
print(T1[ :  : 2])
```

a) (100, 7)
(1,3, 5, 7,9)

b) (100, 8)
(1, 3, 5, 7,9)

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

d) (9, 8, 7, 6)
(1, 3, 5)

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

```
T1 = (55, 32, 4, 55, 2, 12, 23, 55, 7, 9, 10, 23)
print(T1[T1.count(23) + len(T1) -7])
print(T1.count(T1[6]))
```

a) 55
2

c) 7
2

b) 10
3

d) 23
3

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

```
d1={"name":"VIIT","div":"FY.B.Tech","Roll no.":500,"PRN":2220001,"Sub":"Python","Marks":60}
print(d1.get("Sub"))
del d1["Roll no."]
del d1["Marks"]
print(d1)
```

a) Python
{'name': 'VIIT', 'div': 'FY.B.Tech', 'PRN': 2220001, 'Sub': 'Python', 'Marks':60}

b) Python
{'name': 'VIIT', 'div': 'FY.B.Tech', 'PRN': 2220001, 'Sub': 'Python'}

c) Error

d) None of the above

viii) Select the correct option to display : **wow! VIIT is Best!** [2]

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

a) print(R[1][2][-2],R[0]["Pune"],R[1][2][-1],R[1][0])

b) print(R[1][2][0],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*2 <= 10:
        if i%5==0:
            break
    print(i,end=" ")
    i += 1
```

a) 1 2 3 4 b) 1 2 3 4 5 c) error d) none of the mentioned

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

```
if 5>=10:
    print("India")
elif True:
    print("Pune is Best City!")
    if True:
        print("Enjoy")
else:
    print("See you Soon..")
```

a) India b) Enjoy c) Pune is Best City! Enjoy d)See you Soon..

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

```
i = 0
while i < 10:
    print(i,end=" ")
```

```
    i += 2
    if i == 6:
      break
else:
    print(0)
```

a) 0 2 4 b) 0 2 4 0 c) error d) 0 2 4 6 8

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

```
for num in range(10,16,2):
  for i in range(2, num):
    if num%i == 0:
      print(num,end=" ")
      break
```

a) 10 12 14 16 b) 10 12 14 c) error d) None of the mentioned

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

```
odd=lambda x: bool(x%2==0)
numbers=[n for n in range(5)]
n=list()
for i in numbers:
  if odd(i):
    continue
  else:
    break
print(numbers)
```

a) [0, 1, 2, 3, 4, 5] b) [0, 1, 2, 3, 4] c) 0 1 2 3 4 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(201*50, 99*51)
```

a) 5049 b) 10050 c) 5050 d) None of the mentioned

xv) What will be the output of the following Python code?
mod1 and mod2 modules are imported in main file. [2]

```
#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=[3,4,5]
change(s)
```

a) [6, 8, 10] b) [3, 4, 15] c) [9, 16, 25] d) None of the mentioned

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

a) Write a python code to perform operation on NumPy array. Return array of items by taking diagonal elements of the array and array of reverse items of an array [5]

```
samA=[[11 ,22, 33], [44, 55, 66], [77, 88, 99]]
Printing Input Array: samA= [[11 22 33]
                            [44 55 66]
                            [77 88 99]]
```

Expected Output:

array of diagonal items of an array	array of reverse items of an array
[[11] [55] [99]]	[[77 88 99] [44 55 66] [11 22 33]]

b) Consider three arrays as below [5]

A = [[10,25,40],[11,22,33]]
B = [[5],[10]]
C = [[6,12],[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=[55,65,75,85] and arr2=[25]
Expected Output:
A = [2 2 3 3] B = [5 15 0 10] C = [32 32768 1 59049]

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 life.txt .Write a function count_lines() to count total number of 'your' word in the given file and display the total number of lines and total number of words from the file. [5]

Input:
You cannot afford to live in potential for the rest of your life; at some point, you have to unleash the potential and make your move.
Our greatest weakness lies in giving up.
The most certain way to succeed is always to try just one more time.

b) Explain in detail the modes used in text file for the following operations with the symbols. [5]
a) Read Only c)Write only
Differentiate between write and append mode with example?
State the significance of seek() and tell() function

c) Consider following lines for the file engtest.txt and predict the output: [5]
Input:
1. Python is a high-level, interpreted, general-purpose programming language.
2. Its design philosophy emphasizes code readability with the use of significant indentation.
3. Python is dynamically-typed and garbage-collected

```
f = open("engtest.txt",'w')
f = open("engtest.txt",'r')
l = f1.readline()
print(l)
f1.seek(10)
print(f1.tell())
l2 = f1.readline(25)
print(l2)
print(f1.readline())
ch3=f1.read(10)
print(ch3)
f1.close()
```

d) Write a Python program to accept five hobbies from the user and write in a file "hobby.txt" (each hobby should write in separate line) with using write() function. Also write the same code without using write() function. [5]