Q) Y.M.

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST-3 EXAMINATION- MAY -2018
B.Tech Bioinformatics IV Semester

COURSE CODE: 15B11BI421 MAX. MARKS: 35

COURSE NAME: Programming Languages for Bioinformatics MAX. TIME: 2 HRS

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

Q1. What gets printed for the following codes :

a) (1 Mark)

```
mothers =
dict(list(zip(['Harry','Ron','Hermione'],['Lily','Molly','Monica'])))
print (mothers)
```

b) (3 Marks)

```
def function(x,lst=[1,2]):
      for i in range(x):
            lst.append(i*i)
      print(lst)
f(2)
f(3,[3,2,1])
f(3)
```

c) (1 Mark)

```
string="Dr. Stephen Strange: I went forward in time... to view alternate
futures. To see all the possible outcomes of the coming conflict."
string=string.split(" ")
words=string[0:3]
print ( " ".join(words))
```

d) (1 Mark)

```
square=['Heart','Ember','Abuse','Resin','Trend']
w=[]
for i in square:
      l=i[0]
      w.append(l)
print (w)
```

e) (4 Marks)

```
words=['LIMB',"AREA","CORK","KNEE"]
def f(l,n):
      w=[]
      for i in l:
            l=i[n]
            w.append(l)
      print ( "".join(w))
f(words,0)
f(words,1)
f(words,2)
f(words,3)
```

Q2. Write the output of following statements in python3. Assume re module has been imported in the current namespace. **(1 X 5= 5 Marks)**

a) `re.findall( r'ATAT', "TTATATATACATAT")`
b) `re.sub( r'AT..', "TAGG", "TTATATATACATAT")`
c) `re.split( r"takes", "Winning takes talent, to repeat takes character", 1 )`
d) `id=Hagrid@hogwarts.edu`

```
a. pattern = re.compile( r'@\w+.(\w+)')
b. print ( pattern.findall(id) )
```

e) `"Py" in "Python"`

Q3. Write short note with example on the following python function / method / statements. **(2X5=10 marks)**

a) `enumerate`
b) `.items()`
c) `zip`
d) `.index()`
e) `.keys()`

Q4. Write a Biopython pseudocode for reading a genbank file and writing the sequence in it in a fasta formatted file. **(3 Marks)**

Q5. Write a program which will find all such numbers which are divisible by 7 but are not a multiple of 5, between 2000 and 3200 (both included). The numbers obtained should be printed in a comma-separated sequence on a single line. **(3 Marks)**

Q6. With a given integral number n, write a program to generate a dictionary that contains `(i, i*i)` such that is an integral number between 1 and n (both included). and then the program should print the dictionary.
Suppose the following input is supplied to the program:
8
Then, the output should be:
`{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64}`

(4 Marks)