BENNETT UNIVERSITY

DO NOT WRITE ANYTHING ON QUESTION PAPER EXCEPT YOUR NAME, DEPARTMENT AND ENROLMENT No.

Name of Student ---------- Enrolment No. ----------

Department / School ----------

BENNETT UNIVERSITY, GREATER NOIDA

Mid Term Examination, Fall SEMESTER 2019-20

COURSE CODE: ECSE105L MAX. DURATION: **One HOUR**

COURSE NAME: Computational Thinking and Programming MAX. MARKS: **20**

Note :

- All the questions are compulsory.
- No Separate answer sheets will be given. Answer in the space provided.
- Read each question carefully before answering.
- Please write precisely and neatly. Please make clear diagram wherever required.

MULTIPLE-CHOICE QUESTIONS

[4 × 0.5= 2 Marks]

Q.1. What is the incorrect way to define a variable?

a) 1var
b) var@
c) first variable
d) All of above

Q.2. Assume that we have a **myList= [3, 4, 5, 2, 5].** What will be the contents of the myList list after **myList.extend([34,5])?**

a) [3, 4, 5, 34, 5]
b) [34, 5, 3, 4, 5, 2, 5]
c) [3, 4, 5, 2, 5, 34, 5]
d) None of above

Q.3. Which of the options will print **True**?

a) print(mylist[-6:4]== mylist[1:4])
b) print(mylist[-5:4]== mylist[2:4])
c) print(mylist[-1:3]== mylist[-1:4])
d) All a, b, c
e) None of a, b, c

Q.4. What is the result of following expression?

10 % 1 * 21 / 32 << 2 and 40

a) 21
b) 40
c) 8
d) None of above

TRUE/FALSE

[2 Marks]

Q.5. Based on the understanding of various concepts, mark the following statements either True or False

a) print (10 == "10")
b) print ("bag" < "apple")
c) print(bool("False"))
d) One advantage of functions is code reuse?

PROGRAMMING

[3 Marks]

Q.6. Assume that you are working to develop a software in the industry. One feature of the software demands to take a string input from user and print number of lower-case characters, number of uppercase characters, number of digits, and number of special characters. Develop a python code that enables the above feature in the software.

Example:
User Input: My 1st midterm!!!
Number of Digits : 1
Number of Upper case : 1
Number of lower case : 10
Number of Special Character : 5

[4 Marks]

Q.7. In software industries, one of the key tasks is to read and understand the code for further enhancements/modification. Your manager in the industry asks to you identify the portion of the codes that delivers same output.
Below are eight python codes for you to read, understand, and then you have to group them into **four different groups/clusters** based on the similarity of the outputs.

A

```
A=[1, 10, 8, 7, 12, 14, 13, 18, 22]
i=0
while i < len(A):
  if A[i]%2==0:
    A.remove(A[i])
  else:
    i=i+1
print(A)
```

B

```
A=[1, 10, 8, 7, 12, 14, 13, 18, 22]
i=0
for i in A:
  if i%2==0:
    A.remove(i)
print(A)
```

C

```
a=[]
for i in range(20):
  if(i%2 != 0):
    a.append(i)
print(a)
```

D

```
a=[]
for i in range(0,20,2):
  a.append(i)
print(a)
```

E

```
a=[i for i in range(1,20,2)]
print(a)
```

F

```
a=[i for i in range(20) if(i%2==0)]
print(a)
```

G

```
A=[1, 10, 8, 7, 12, 14, 13, 18, 22]
i=0
for i in A[:]:
  if i%2==0:
    A.remove(i)
print(A)
```

H

```
A=[1, 10, 8, 7, 12, 14, 13, 18, 22]
i=0
while i < len(A):
  if A[i]%2==0:
    A.remove(A[i])
  i=i+1
print(A)
```

	Code ID's	Output
Group 1		
Group 2		
Group 3		
Group 4		

[6 × 1 = 6 Marks]

Q.8. As stated earlier, software development also leads to understanding of the existing code. Check the codes below and find the output of the codes below:

Code - A	**Output – A**

if 10:
  print("A")
if -10:
  print("B")
if 0:
  print("C")
else:
  print("D")	

Code – B	**Output – B**

def power(x, y=2):
  r = 1
  for i in range(y):
  r = r * x
  return r
print(power(3))
print(power(3,3))	

Code – C	**Output – C**
A = [[1, 2], [3, 4], [5, 6]] B = A.copy() C = A.copy() B[0]=10 print("A:", A) print("B:", B) print("C:", C) C[1][0]=10 print("A:", A) print("B:", B) print("C:", C)	
Code – D	**Output – D**
x=45 y=15 while(y): x, y = y, x % y print(x)	
Code – E	**Output – E**
a=10 a/=5!=5 and 6>=100>>2 print(a)	

Code – F	Output – F
ns = '' for x in "Mid Term 1": ns = x + ns print(ns)	

[3 Marks]

Q.9. It is a regular practice in the industries to plan before actual development of the software. One of the phases includes software design in which certain diagrams are created. One diagram that we know is **flowchart** that enables technical as well as non-technical members to understand the software.

Hence, your manager asked you to construct a flowchart for a code that gives N consecutive prime numbers starting from 2. Where N is given by user.

NOTE: Use of proper symbols for different steps.

Example: N = 3 output: 2, 3, 5 N = 5 output: 2, 3, 5,7,11