

Indian Institute of Technology, Madras - BS in Data Science and Applications

Notations :

- 1.Options shown in green color and with ✓ icon are correct.
- 2.Options shown in red color and with ✗ icon are incorrect.

Question Paper Name :	IIT M FOUNDATION AN EXAM QDF2 15 Mar 2026
Subject Name :	2026 Mar15: IIT M AN EXAM QDF2
Creation Date :	2026-03-05 10:48:22
Duration :	120
Total Marks :	380
Display Marks:	Yes
Share Answer Key With Delivery Engine :	Yes
Actual Answer Key :	Yes
Calculator :	Scientific
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console?	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No

Group I

Group Number :	1
Group Id :	64065332677
Group Maximum Duration :	0
Group Minimum Duration :	90

Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	380
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No
Revisit allowed for group Instructions? :	Yes
Maximum Instruction Time :	0
Minimum Instruction Time :	0
Group Time In :	Minutes
Revisit Section :	Yes
Action on Revisit Section :	View and Edit
Navigate To Group Summary From Last Question? :	No
Disable Submit Button During Assessment? :	No
Section Selection Time? :	0
No of Optional sections to be attempted :	0

Programming in Python

Section Id :	640653129241
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	13
Number of Questions to be attempted :	13
Section Marks :	50
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	No
Section Maximum Duration :	0
Section Minimum Duration :	0
Section Time In :	Minutes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	640653360197
Question Shuffling Allowed :	No

Question Number : 1 Question Id : 6406531951119

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL : PROGRAMMING IN PYTHON (COMPUTER BASED EXAM)"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406536343721.  Yes

6406536343722.  No

Sub-Section Number :

2

Sub-Section Id :

640653360198

Question Shuffling Allowed :

Yes

Question Number : 2 Question Id : 6406531951120

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following code:

```
def calc(a, b):  
    if b == 0:  
        return a, 0, 1  
    x, y, z = calc(a, b-1)  
    return x + 1, y + x, z * 2  
  
p, q, r = calc(3, 2)  
print(q, r)
```

What will be the output?

Options :

6406536343723.  3 4

6406536343724.  7 4

6406536343725.  6 8

6406536343726.  5 2

Question Number : 3 Question Id : 6406531951121

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following code:

```
s = "python"
result = ""

for ch in s:
    if ch == 'h':
        continue
    if ch == 'o':
        break
    result += ch

print(result)
```

What will be the output?

Options :

6406536343727. ✖ pytho

6406536343728. ✔ pyt

6406536343729. ✖ pyton

6406536343730. ✖ pytn

Question Number : 4 Question Id : 6406531951123

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following Python code:

```
n = 234
p = 1
total = 0

while n > 0:
    digit = n % 10
    total = total + digit * p
    p = p + 1
    n = n // 10

print(total)
```

What will be the output?

Options :

6406536343735. ✖ 20

6406536343736. ✖ 14

6406536343737. ✖ 24

6406536343738. ✔ 16

Sub-Section Number :

3

Sub-Section Id :

640653360199

Question Shuffling Allowed :

Yes

Question Number : 5 Question Id : 6406531951122

Correct Marks : 4

Question Label : Multiple Choice Question

Consider the following code:

```
a = [3, 1, 4, 1, 5]
b = a.copy()
b.sort()
a[2] = 9

print(a, b)
```

What will be the output?

Options :

6406536343731. ✖ [3, 1, 4, 1, 5] [1, 1, 3, 4, 5]

6406536343732. ✔ [3, 1, 9, 1, 5] [1, 1, 3, 4, 5]

6406536343733. ✖ [1, 1, 9, 4, 5] [1, 1, 9, 4, 5]

6406536343734. ✖ [3, 1, 9, 1, 5] [3, 1, 9, 1, 5]

Sub-Section Number :

4

Sub-Section Id :

640653360200

Question Shuffling Allowed :

Yes

Question Number : 6 Question Id : 6406531951124

Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the following Python code:

```
s = "abracadabra"
count = 0

for ch in s:
    if ch in "aeiou":
        count += 1
    elif ch == 'b':
        count += 2
    elif ch in "abc":
        count += 3

print(count)
```

Which of the following statements are true?

Options :

6406536343739. ✔ The final value of `count` is `12`

6406536343740. ✔ The character `'a'` increases `count` by `1`

6406536343741. ✖ The letter 'r' increases the value of count by 1 and the character 'b' increases count by 3

6406536343742. ✔ The letter 'b' increases the value of count by 2 and the character 'c' increases count by 3

Question Number : 7 Question Id : 6406531951125

Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the following Python code:

```
def process(x, y=3):  
    if x > y:  
        x = x - y  
    else:  
        x = x + y  
    y = x * 2  
    return x, y  
  
a, b = process(5)  
c, d = process(2, 4)  
  
print(a, b)  
print(c, d)
```

Which of the following statements are true?

Options :

6406536343743. ✔ The output of the first print statement is 2 4

6406536343744. ✖ The output of the second print statement is 5 10

6406536343745. ✖ The default value of y is used in the second function call

6406536343746. ✔ The function process returns two values as a tuple

6406536343747. ✓ The output of the second `print` statement is `5 12`

Sub-Section Number : 5
Sub-Section Id : 640653360201
Question Shuffling Allowed : Yes

Question Number : 8 Question Id : 6406531951126

Correct Marks : 4

Question Label : Short Answer Question

What is the output of the following snippet of code?

```
data = ["Courses", ["Python", "2026"], "quiz"]  
print(len(data[0]) + sum(int(d) for d in data[1][1]) + len(data[2]))
```

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

21

Question Number : 9 Question Id : 6406531951128

Correct Marks : 4

Question Label : Short Answer Question

Consider the following snippet of code. What will the output be?

```
words = ["pen", "book", "pencil", "eraser", "ink"]
result = 0
small = []

for i in range(len(words)):
    if len(words[i]) < 4:
        small.append(words[i])
    elif words[i][0] == 'p':
        result += 2
    else:
        result += 3

print(len(small) + result)
```

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 10 Question Id : 6406531951129

Correct Marks : 4

Question Label : Short Answer Question

What is the output of the following snippet of code?

Note: `isinstance(object, type)` :checks whether an object belongs to a given type or any of its subclasses.

```
a = True
b = 10
c = False
d = 0
count = 0

if isinstance(a, bool) and a:
    count += 3
if isinstance(b, int) and b:
    count += 4
if isinstance(c, bool) and not c:
    count += 5
if isinstance(d, bool):
    count += 6
if isinstance(d, int) and not d:
    count += 2

print(count)
```

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

14

Sub-Section Number :

6

Sub-Section Id :

640653360202

Question Shuffling Allowed :

Yes

Question Number : 11 Question Id : 6406531951127

Correct Marks : 3

Question Label : Short Answer Question

What is the output of the following snippet of code?

```
lst = [1, 2, 1, 3, 3, 4, 5]
newlst = [x*2 if x % 2 == 0 else x+1 for x in lst]
print(sum(newlst))
```

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

30

Sub-Section Number : 7

Sub-Section Id : 640653360203

Question Shuffling Allowed : No

Question Id : 6406531951130 Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Question Numbers : (12 to 13)

Question Label : Comprehension

Consider the following snippet of code and answer the sub-questions:

```
def tuple_process(data):
    result = []
    i = 0
    while i < len(data):
        item = data[i]
        if item[1] % 2 == 0:
            result.append(item[0] * 2)
        else:
            result.append(item[0] + 1)
        i += 1
    return result

pairs = [(2, 3), (4, 6), (5, 1), (3, 8)]
output = tuple_process(pairs)
print(output)
```

Sub questions

Question Number : 12 Question Id : 6406531951131

Correct Marks : 4

Question Label : Multiple Choice Question

What is the value of `output` after executing the given code?

Options :

6406536343752. ✖ `[4, 9, 11, 6]`

6406536343753. ✓ [3, 8, 6, 6]

6406536343754. ✗ [5, 8, 10, 6]

6406536343755. ✗ [3, 6, 6, 6]

Question Number : 13 Question Id : 6406531951132

Correct Marks : 3

Question Label : Multiple Choice Question

In the given code, if we change the condition to `if item[1] % 2 == 1` instead of `if item[1] % 2 == 0`, what will be the value of `output`?

Options :

6406536343756. ✓ [4, 5, 10, 4]

6406536343757. ✗ [3, 8, 6, 6]

6406536343758. ✗ [4, 8, 6, 4]

6406536343759. ✗ [5, 8, 10, 6]

Question Id : 6406531951133 Sub Question Shuffling Allowed : No Group Comprehension

Questions : No Question Pattern Type : NonMatrix

Question Numbers : (14 to 15)

Question Label : Comprehension

Consider the following snippet of code and answer the sub-questions:

```
def process(s):
    A = s[1:5]
    B = s[-4:]

    if A > B:
        return A, B
    else:
        return B, A

text = "CoMPuter"
P, Q = process(text)
```

Sub questions

Question Number : 14 Question Id : 6406531951134

Correct Marks : 4

Question Label : Multiple Choice Question

What are the values of **P** and **Q** after executing the given code?

Options :

6406536343760. ✖ **P = "oMPu", Q = "uter"**

6406536343761. ✔ **P = "uter", Q = "oMPu"**

6406536343762. ✖ **P = "MPut", Q = "oMPu"**

6406536343763. ✖ **P = "uter", Q = "MPut"**

Question Number : 15 Question Id : 6406531951135

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statements are true?

Options :

6406536343764. ✔ Both **P** and **Q** are substrings of **text**

6406536343765. ✖ The expression **A[1:] == B[:-1]** evaluates to **True**

6406536343766. ✖ The comparison ignores uppercase and lowercase letters

6406536343767. ✓ The expression `text[1:5] > text[-4:]` evaluates to `False`