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அடுத்தப் பக்கத்தில் கொடுக்கப்பட்டுள்ள குறிப்புகளை படிக்கவும் (Read the instructions given in the next page)

Q. No.	A	B	C	Q. No.	A	B	C	Q. No.	A	B	C	Q. No.	A	B	C
1.				9.				17.				25.			
2.				10.				18.				26.			
3.				11.				19.				27.			
4.				12.				20.				28.			
5.				13.				21.				29.			
6.				14.				22.				30.			
7.				15.				23.				31.			
8.				16.				24.				Total Marks			

For Revaluation

For Central Valuation

Q. No.	A	B	C	Q. No.	A	B	C	Q. No.	A	B	C	Q. No.	A	B	C
1.	3			9.	2			17.				25.			
2.	1			10.	1			18.				26.			
3.	3			11.	12			19.				27.			
4.	1			12.	12			20.				28.			
5.	1			13.		5+4		21.				29.			
6.	1			14.		10		22.				30.			
7.	2			15.		12		23.							
8.	2			16.				24.							

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Question Paper Code No. 17 5 7

வினாத்தாளின் குறியீட்டு எண்

No. of P

எழுதப்பட்ட

Date of Examination : 12.11.2024

தேர்வு நாள்

Subject Name : Python programming

பாடத்தின் பெயர்

mathematical operations. There are two types in varithmetic operator. They are

i) Binary operator

ii) Unary operator.

i) Binary operator:

A Binary operator need a two operands

தேர்வாளர்களுக்கான அறிவுரைகள்
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   Get the answer book replaced, if
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   - it is not stapled properly
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   - the page numbers are missing or not in order (there shall be 30 pages continuously numbered)
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   - the serial number of the answer book is not printed at the bottom of the title page
2. உங்களுடைய பதிவு எண்ணையும், பெயரையும் அதற்காக கொடுக்கப்பட்டுள்ள தலைப்பு பக்கத்தின் கீழ்பகுதியில் மட்டும் எழுதவும்; அதைத் தவிர்த்து பதிவு எண், பெயர் ஆகியவற்றை விடைத்தாளில் மற்றப் பக்கங்களில் எழுதக்கூடாது. எந்தவிதமான அடையாளக் குறியீட்டையும் விடைத்தாளில் எழுதக்கூடாது.
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3. தலைப்புப் பக்கத்தில் கொடுக்கப்பட்டுள்ள அதற்குரிய கட்டங்களில் விவரங்களை எழுதவும்.
   Fill up all the particulars, in the relevant boxes, in the title page.
4. கேள்விகளுக்கு பதில் எழுதும் போது விடைத்தாளில் இரண்டு பக்கங்களையும் பயன்படுத்த வேண்டும். பக்கங்களில் தொடர்ந்து விடை எழுதாமல் வெற்றிடம் விடக் கூடாது.
   Use both sides of the paper for answering questions, without leaving spaces/ lines in between.
5. இந்த விடைத்தாள் புத்தகம் போதுமான பக்கங்களை கொண்டிருக்கிறது. இதைத் தவிர கூடுதல் விடைத்தாள் அளிக்கப்படமாட்டாது.
   This answer book contains sufficient pages and no additional sheets will be issued.
6. கேள்விக்கு விடையளிக்கும் முன்பு வினாத்தாள் எண், வருடம், மாதம், காலம் இவைகளை சரிபார்க்கவும்.
   Check the Code Number, Month and year of Examination, Duration etc., in the question paper before answering the questions.
7. கொடுக்கப்பட்டுள்ள வரைப்படத்தாள் / கிராப் ஷுட் தவிர வேறு எந்த விடைத்தாளையும் சேர்க்க கூடாது. விடைத்தாள் புத்தகத்திலிருந்து எந்த பக்கத்தையும் கிழிக்கக் கூடாது.
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PART-B

III.a) Operators in python:

The following are the various operators available in Python. They are.

i) Arithmetic operator
ii) Relational operator
iii) Logical operator
iv) Bitwise operator
v) Membership operator
vi) Identity operator
vii) Short hand assignment operator.

i) Arithmetic operator:

The arithmetic operator is used to do mathematical operations. There are two types in arithmetic operator. They are

i) Binary operator
ii) Unary operator.

i) Binary operator:

A Binary operator need a two operands

for the operation. The table given below shows the operations of Binary operator.

Operator	Operation	Example
+	Addition, To add the LHS operand with RHS operand	x = 5+8 x = 8
-	Subtraction, To Subtract the LHS operand with RHS operand	x = 8-5 x = 3
*	Multiplication, To multiply the LHS operand with RHS operand.	x = 5 * 5 x = 25
/	division, To divide the LHS operand with RHS operand	x = 4/2 x = 2
%	modulus division, To divide the LHS operand with RHS operand and returns quotation.	x = 9/2 x = 1

ii) Unary operator:

A unary operator need only one operand for do operation. The table given below shows the operation of unary operator.

operator	operation	Example
-	unary minus	-10

iii) Relational operator:

A relational operators are used to compare the LHS and RHS value. The result be a either true or False. The following table show the operation of Relational operator.

operator	operation	Example
>	The LHS value is greater than RHS value is true else false	A > B
<	The LHS value is Less than RHS value is true else false	A < B

>=	The LHS value is greater than or equal to RHS value is true, else false	A >= B
<=	The LHS value is less than or equal to RHS value is true, else false.	A <= B
==	The LHS value is ~~less than~~ equal to RHS value is true else false	A == B
!=	The LHS value is not equal to RHS value is true else false.	A != B

iii) Logical operator:

A logical operator is used to compare the LHS and RHS value. There must be relational expression. The result be a either true or False. The following table show the operation of Logical operator.

* AND &
* OR |
* NOT !

operator	operation	example
AND &&	If both the condition is true, the result is true, else false	a = 10 a<100 and a<50 True
OR ||	If any one condition is true, the result is true, else false	a = 10 a<100 and a<5 True
NOT !	The result is opposite to the condition	a = 10 a<100 False

v) Membership operator:

A membership operator is used to find the given element is present in the any sequence list, tuple etc., or not. The following shows the operation of membership operator

operator	operation	example
in	If the element is present in it is True else false	'cat' in t true
not in	If the element is not present in it is True else false	'cat' not in t False

12.a) Decision making statements:

A Decision making statements are used to execute or skip a group of statements or single statements if the test condition is true. The following decision making statements. They are

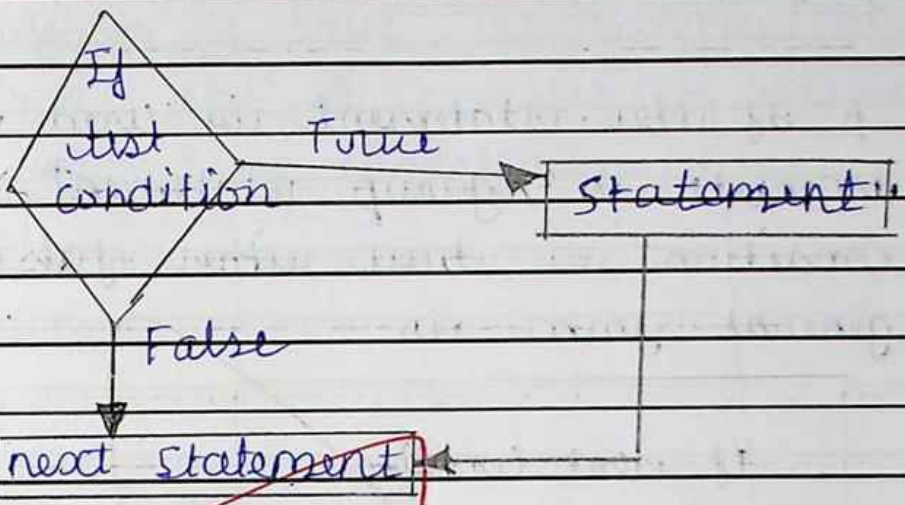
i) If statement
ii) If else statement
iii) If elif else statement.

i) If Statement:

A if statement is used to skip or execute a statements, if the test condition is true. The general form is.

```
If test condition:
    Statement 1
    Statement 2
    - - - - -
    - - - - -
    Statement n.
next statement
```

Flow chart:



During execution, the if check the test condition, if the condition is true, the statement block will be executed and the control is transferred to next statement.

Example:

```
mark = 10
grade = 'A'
if grade == 'A':
    mark = mark + 10
    print (mark)
print ('program executed successfully')
```

output:

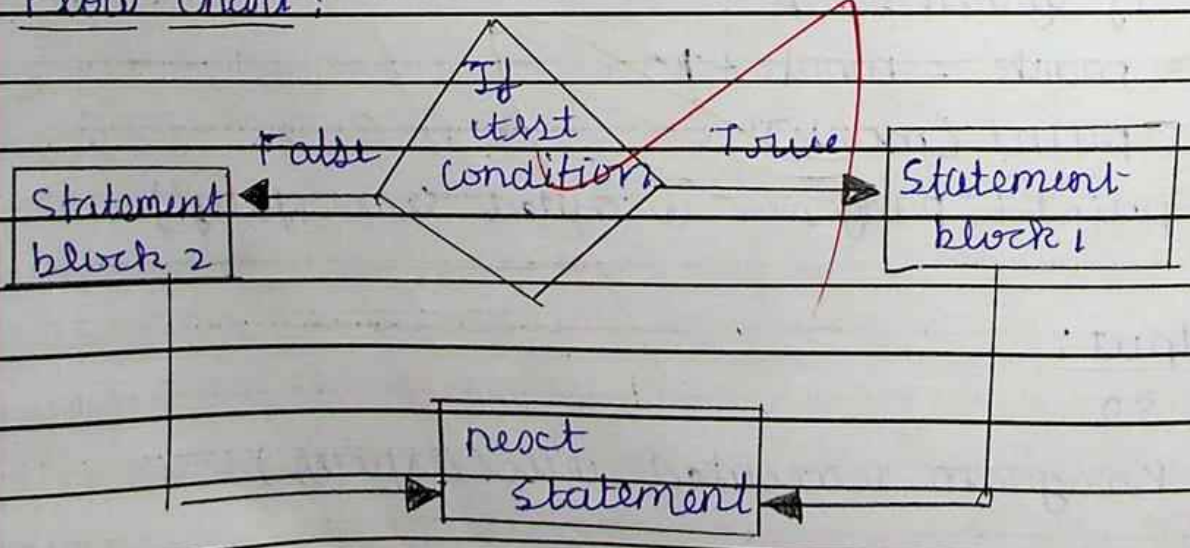
```
80
Program executed successfully
```

ii) If else Statement:

A if else statement is used to skip or execute a group statement, if the condition is true either false. The general form is

```
If test condition:
    statement 1
    Statement 2
    Statement n
else:
    Statement 1
    Statement 2
    Statement n
next statement
```

Flow chart:



During execution. It check the test condition if test condition is true, it executes a statement block1 else it executes a statement block 2 and control is transferred to next statement

Example:

```
a = 10 ; b = 20
if a > b:
    print ('a is bigger')
else:
    print ('b is bigger')
```

output:

b is bigger

iii) If elif else Statement:

A if elif.. else statement is execute or skip a group of statements. The general form is

```
If test condition 1:
    statement block 1
elif test condition 2:
    statement block 2
elif test condition 3:
```

```
    statement block 3
    - - - - - - -
    - - - - - - -
elif test condition n:
    statement block n
else:
    statements
next statement.
```

Example program:

```
a = -27
if a>0:
    print ('Positive number')
elif a==0:
    print ('zero')
elif a<0:
    print ('Negative number')
else
    print ('Invalid number')
```

output:

Negative number.

13.b) i) Creation of List:

A list is a ordered collection of object. The object in list are seperated by comma and enclosed with the square brackets.

The general form to create a list is

variable = [object seperated by comma]

where,

variable - user defined variable name.

Example:

i) l = [1, 2, 3, 4, 5]

ii) l = ['one', 'two', 'Three']

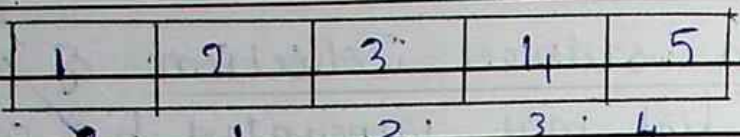
iii) l = [1, 'one', 2, 3, 'two']

Accessing elements from list:

The elements in list can be accessed by its index value.

Consider a list given below.

l = [1, 2, 3, 4, 5]



where

0 - 4 - Positive integer

-1 - -5 - Negative integer

* The Positive integer can be accessed from left to right.

* The negative integer -1 - -5 can be accessed from right to left.

There are two types to access elements from list. They are

i) Accessing individual element from list

ii) slicing a list.

i) Accessing individual element from list:

The general form to access individual element from list is

`VariableName[index]`

where,

Variable name - valid list Variable name

index - Positive or negative integers

Examples:

i) print (l[3])

4

ii) print (l[-1])

2

ii) slicing a list:

A slicing is a process of taking a range of character from list. The general form is

variable name [start : stop]

where

variable name - user defined name

start - starting index

stop - ending index.

Examples:

i) print (l[1:4])

0 1 2 3

ii) print (l[-1:-2])

5 4 3

33.b) ii) copy the list:

The copy the list is a process of taking

a copy of existing list. The process of copying the list is also known as list cloning. The general form is:

```
new list = listname.copy()
```

where,
new list - to copy the existing list
listname - existing list name
copy() - function

Example:

```
l = [1,2,3,4]
t = l.copy()
print(t)
```

output:
[1,2,3,4]

(14,b) Dictionary creation:

A dictionary is unordered collection of objects. The objects are enclosed with in the curly brackets {}. The created dictionary can be modified. but the key

cannot be modified. The general form is

variable = {Key : value, Key : value ...}

Where,

variable - valid dictionary name

Key - Key to value

value - value of the Key

Example:

i) d = {}

ii) d = {101 : 1000, 102 : 2000, 103 : 3000}

iii) d = {101 : 'Ramu', 102 : 'Somu', 103 : 'Raj'}

Accessing values of dictionary:

The value of the dictionary can be accessed by using its Key. The Key in the dictionary cannot be modified, but the value can be modified. The general form to access a value in dict is

dictionaryname.(Key)

Where

dictionaryname - existing dictionary name

Key - Key of the value

Example:

```
d = {101: 'Ramu', 102: 'Somu'}
print(d.values[101]) (or) print(d.Keys(101))
```

Output:

Ramu

Updating dictionary:

The updating dictionary is a process of inserting a new value in already having value's place. The general form is

```
dictionaryname[Keys(value)]
```

Where,

dictionaryname = Existing dictionary name

Keys - Key of the value to update.

In dictionary, value only can be modified, cannot be modify Keys.

Example:

```
id = {101:'Somu', 102:'Raju'}
id[101('Ramu')] (or) id.101('Ramu')
print(id)
```

Output:

```
{101:'Ramu', 102:'Raju'}
```

15.b) Directory Methods:

A Directory methods are used to handle the directory in Python. The following are the directory methods. They are:

i) chdir()
ii) rmdir()
iii) cwdir()
iv) mkdir()
v) listdir()
vi) removedir()

i) chdir():

The chdir is used to change the currently working directory. The general

form id

```
import os
os.chdir(directory name)
```

Where,

import os - module

chdir() - ~~change directory~~ method name

directory name - name of the direct to change

Example:

```
import os
os.chdir('Python')
print('directory changed')
```

output:

directory changed.

ii) rmdir:

The rmdir directory is used to remove directory from the system. The general form is

```
import os
os.rmdir(directory name)
```

where,

import os - module

rmdir() - method name

directory name - name of directory to delete.

Example:

```
import os
os.rmdir('python')
print('directory is deleted')
```

output:

directory is deleted.

iii) mkdir():

The mkdir is used to create a new directory. The general form is

```
import os
os.mkdir(name)
```

where,

import os - module

mkdir() - method name

name - name of the directory to be created.

Example:

```
import os
os.mkdir ('computer')
print ('directory is created
```

output:

directory is created.

iv) cwdir():

The cwdir is used to display the currently working directory. The general form is

```
import os
os.cwdir()
```

where

import os - module
cwdir() - method name

Example:

```
import os
os.cwdir()
'python
```

v) listdir():

The listdir() is used to list the all directory in system. The general form is

```
import os
os.listdir()
```

Example:

```
import os
os.listdir()
```

python d://CSE Computer CSE Lab.

iv) rename():

The rename() is used to change the name of the existing directory. The general form is

```
import os
os.rename(old name, new name)
```

where,

import os - module

rename - method name

old name - name of the existing directory

new name - new name of the existing directory.

Example:

```
import os
```

os.rename ('Python', 'computer')
print ('Name changed')

output:
Name changed.

PART-A

1. Feature of python:

* Easy to learn
* Easy to use
* Extensible or miscable
* Object oriented language
* Free and open source
* Intreprited language
* Graphical user interface support.

3. difference between break and continue statement

Break statement	continue statement
i) A Break statement is used to escit from a loop if the condition is true.	A continue statement is used to skip a part if the condition is true

ii) The general form is break	The general form is continue.
iii) Examples: while condition - - - - - - break - - - - - - - - - - - - - - -	Example for condition - - - - - - continue - - - - - - - - - - - - - - -

5. Immutable property:

* The immutable property means the objects can not modified after the creation.
* If we try to modify the object, it displays an error messages.
* The example of immutable properties are tuple, list, string etc...,

7. Accessing values in tuple:

A tuple values can be accessed by the index value:

consider a tuple given below.

t = (1, 2, 3, 4, 5)

1	2	3	4	5
0	1	2	3	4
-5	-4	-3	-2	-1

where

0 - 1 - positive integer

-1 - -5 - negative integer.

* The positive integer 0 to 1 can be accessed from left to right.
* The negative integer -1 to -5 can be accessed from right to left.

8. Dictionary:

* A dictionary is a unordered collection of objects. The dictionary elements are enclose with in {} curly brackets.
* A dictionary contains Key-value pair.
* A dictionary is mutable, but the Key can not be modified.

* In dictionary, value can accessed by using the Key.

9. Renaming operation on a file :

A renaming is a process changing the name of the existing file. The general form is

```
import os
os.rename(file location, newname)
```

Example:

```
import os
os.rename(Python, computer)
```

10. Exception :

* The exception is used to handle the errors in the programs.

* The exception contains the exception handling statements.

* It handle error such as value error, zero division error etc ...)

2. Expression:

The expression are used in the operation for doing the logical operation. There are different types of expressions. They are

i) Relational expression
ii) Logical expression
iii) Arithmetic expression
iv) Boolean expression.

4. Advantages of Functions:

* The functions are used to do different operations.

* There are different types of functions. They are mathematical function, recursive function, numeric function, algorithm function.

* The functions can be used in tuples as a arguments.

* The function can be called by its corresponding name.

6. Uses of pop operator:

* The pop operators are used to remove elements in the string, tuple, list etc...,

* Using pop operator we can remove the specified element from the list

* By using pop operator all the elements from the list cannot be remove in once.