THE VILLAGE
INTERNATIONAL SCHOOL
"We Nurture Dreams"

GRADE :11: INFORMATICS PRACTICES-QUESTION BANK

Chapter4-DATA HANDLING

Very Short answer Type Questions

1. Identify the data types of the following values given bellow –

3, 3j, 13.0,'12',"14", 2+0j,19, [1,2,3],(3,4,5)

Ans: 3 – int 3j – complex 13.0 – float '12' – string "14" – string
2+0j – complex 19 – int [1,2,3] – list (3,4,5) – tuple

2. What will be the output of the following

(a)12/4 (b)14//14 (c)14%4 (d) 14.0/4 (e) 14.0//4 (f)14.0%4

Ans: (a) 3.0 (b) 1 (c) 2 (d) 3.5 (e) 3.0 (f) 2.0

3. What will be the output of the following ?

```
print(17//4)
print(17/4)
print(len(str(17//4)))
print(len(str(17/4)))
```

Ans: 4
4.25
1
4

Q.4 What will be the output of the following ?

(a) bool(0) (b) bool("0") (c) bool(int("0"))
(d) bool(str(0.0)) (e) bool(0j) (f) bool(0.0)

Ans: (a) False (b) True (c) False
(d) True (e) False (f) False

Q.5 What will be the output of the following ?

(a)87//5 (b)(87//5.0) == (87//5) (c) 87//5.0 (d) 17%5.0

Ans: (a) 17 (b) True (c) 17.0 (d) 2.0

6. int("a") produces error. Why?

Ans: This is because „a" is an invalid literal for int() with base 10.

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7. Write following expressions in Python

(a) $\frac{1}{3}b^2h$ **(b)** $d = \sqrt{(x2-x1)^2 + (y2-y1)^2}$ **(c)** $x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$ **(d)** $a^n \times a^m = a^{n\cdot}$

Ans: **(a)** (b*b*h)/3

(b) d=math.sqrt(pow(x2-x1,2)+pow(y2-y1,2))

(c) x1=((-b) + math.sqrt((b*b)-(4*a*c)))/(2*a)

x2=((-b) - math.sqrt((b*b)-(4*a*c)))/(2*a)

(d) pow(a,n) * pow(a,m) = pow(a,m+n)

Short Answer Type Questions

8. What are data types? What are Python‟s built-in core data types?

Ans: Every value in Python has a datatype. Since everything is an object in Python programming, datatypes are actually classes and variables are instance (object) of these classes.

There are various data types in Python. Some of the important types are listed below.

(i) Numbers (ii) String (iii) List (iv) Tuple (v) Dictionary

9. Which data types of Python handle Numbers?

Ans: It is cleared by name that Number data types are used to store numeric value in Python. TheNumbers in Python have following core data types:

(i) Integers
   a. Integers (signed)
   b. Booleans

(ii) Floating-Point Numbers

(iii) Complex Numbers

10. Why is Boolean considered a subtype of Integers?

Ans: Because Boolean Values False and True behave like the values 0 and 1, respectively. So Booleantype is a subtype of plain integers.

11. What do you understand by term „immutable‟?

Ans: Immutable types are those data types that can never change their value in place. In Python thefollowing types are immutable:

(i) integers

(ii) floating-point numbers

(iii) Booleans

(iv) Strings

(v) Tuples

12. What will be the output of the following code? Why?

(a) 13 or len(13) **(b) len(13) or 13**

Ans: (a) 13 (b) TypeError: object of type 'int' has no len().

13. What are mutable and immutable types in Python? List both of them.

Ans: **Mutable types** means those data types whose values can be changed at the time of execution.

They are as follows:

- Lists
- Dictionaries
- Sets

Immutable types are those data types that can never change their value in place.

In Python thefollowing types are immutable:

- integers
- floating-point numbers
- Booleans
- Strings
- Tuples

14. What are augmented assignment operators? How are they useful?

Ans: An augmented assignment is generally used to replace a statement where an operator takes a variable as one of its arguments and then assigns the result back to the same variable. A simple example is x += 1 which is expanded to x = x + (1). Similar constructions are often available for various binary operators. They are helpful in making the source code small.

Skill Based Questions

15. WAP to calculate compound simple interest after taking the principle, rate and time.

Ans:

```
#Compund Interest
p=int(input("Enter the Principal"))
r=int(input("Enter the Interest Rate"))
t=int(input("Enter the Tenure"))
temp=1+r/100
f=1
for i in range(1,t+1):
    f=f*temp
Amount=p*f
interest=Amount-p
print("The interest on ",p," with rate ",r," is ",interest)
```

16.. WAP to check the given year is leap year or not.

Ans:

```
year = int(input("Enter year"))
if (year % 4) == 0:
    if (year % 100) == 0:
        if (year % 400) == 0:
            print("{0} is a leap year".format(year))
        else:
            print("{0} is not a leap year".format(year))
    else:
```

17. **WAP to take two numbers and check that the first number is fully divisible by secondnumber or not.**

Ans:
```
a=int(input("Enter First Number : "))
b=int(input("Enter Second Number : "))
if a%b==0:
    print(a," is fully divisible by ",b)
else:
    print(a," is not fully divisible by ",b)
```

18. **What will be the output of the following?**

```
a=5-4-3
b=3**2**3
print(a)
print(b)
```

Ans: -2
6561

19. **What will be the output of the following?**

```
x,y=4,8
z=x/y*y
print(z)
```

Ans: 4.0

20. **WAP to take value of x,y,z from the user and calculate the equation** $4x^4 + 3y^3 + 9z^2 + 6\pi$

Ans:
```
x=int(input("Enter x : "))
y=int(input("Enter y : "))
z=int(input("Enter z : "))
f=4*pow(x,4)+3*pow(y,3)+9*pow(z,2)+6*3.14
print("The Answer is : ",f)
```

21. **WAP to take the temperatures of all 7 days of the week and displays the averagetemperature of that week.**

Ans:
```
d1=int(input("Temperature of day 1 : "))
d2=int(input("Temperature of day 2 : "))
d3=int(input("Temperature of day 3 : "))
d4=int(input("Temperature of day 4 : "))
d5=int(input("Temperature of day 5 : "))
d6=int(input("Temperature of day 6 : "))
d7=int(input("Temperature of day 7 : "))
avg=(d1+d2+d3+d4+d5+d6+d7)/7
print("The average temp is : ",avg)
```