Question 1 Discuss various features of Python.

Ans 1- Easy to code-

Python is a high-level programming language. It is very easy to learn the language as compared to other languages like C, C++, Java, etc. It is also a developer-friendly language.

2- Object-Oriented language-

One of the features of python is Object-oriented programming. Python supports object-oriented language and concepts of classes, objects, etc.

3- Extensible feature -

Python is a extensible language. We can write ~~##~~ same Python code into C or C++ language and also we can compile that code in C/C++ language.

4- Python is Portable language-

Python language is also portable language. For ex- if we have python code for windows and if want to run this code on other platforms such as Linux, Unix, Mac then we do not need to change it, we can run this code on any platform.

5- Python is integrated language-

Python is also an integrated language because we can easily integrated python with other languages like C, C++, etc.

6- Dynamically Typed language-

Python is a dynamically-typed language. That means the type for a variable is decided at run time not in advanced.

Q-2. Compare between Java, C and Python.

Ans-

Java	C	Python
i) Reasonably high level language	i) Very low level language	i) Very high level language
ii) Procedural idioms only available within methods of classes.	ii) Exclusively structured procedural	ii) Structured procedural
iii) Object oriented programming.	iii) Procedural programming language	iii) Object oriented programming
iv) All base types are always passed by value, while all other types are always passed by object reference.	iv) Everything pass by value, if requiring a reference then pass the pointer address of the variable by value and dereference it inside function.	iv) Pass by object / object reference when issuing arguments to functions.
v) Automatic memory allocation.	v) All memory management must be done manually or through extra libraries.	v) Automatic memory allocation.
vi) Source is compiled into a byte code that is run on a virtual machine.	vi) C is compiled language. It is ~~not~~ platform dependent.	vi) Interpreted - a program written in Python can be run on any platform that has a Python interpreter.
vii) Java program compiler a bit slower than C.	vii) C is a fastest compiling programming language.	vii) Due to use of interpreter execution is slower

Question-3 - Discuss input and output formats in python.

Ans- Input from user in Python-

i) Python get user input with a message -

Ex- name = input ("Enter your name")

ii) Integer input in python -

Ex- num = int (input ("Enter a number"))

How to display output in Python -

i) Using formatted string literals -

Python string formatting using F string -

Ex- name = 'Kunal'

print (f'Hello {name}! How are you?')

Output -

Hello Kunal! How are you?

ii) Using format()

python string formatting using format() function

Ex-

```
a = 20
b = 10
sum = a + b
dif = a - b
print('The value of a is {} and b is {}'. format(a, b))
print('{2} is the sum of {0} and {1}'. format(a, b, sum))
```

Output -

The value of a is 20 and b is 10

30 is the sum of 20 and 10

(iii) Using %. operator-

→ %.d - integer

→ %.f → float

→ %.s - string

→ %. X - hexadecimal

→ %. o - octal

Ex. num = int (input ("Enter a value:"))

add = num + 5

print("The sum is %.d" %. add)

Output -

Enter a value : 50

The sum is 55

Q-4- Discuss the functions

a) id() b) type c) max() d) min() e) eval

f) ord() g) bin() h) chr() i) oct() j) hex()

Ans a) id() - Returns memory location of an object

b) type - Returns the type of an object

c) max() - Returns the largest item in an iterable.

d-) min()- Returns the smallest item in an iterable

e) eval - Evaluates and executes an expression

f) ord()- converts an integer representing the unicode of the specified character

g) bin() - Returns the binary version of a number

h) chr()- Returns a character from the specified unicode code.

i) oct()- Converts a number into an octal.

j) hex()- converts a number into a hexadecimal value.