**Python Q-Edge**

**Covered Concepts**

1. **Definitions**General purpose, Guido Van Rossum, 1989, Mathematics and Research center.
2. **Kinds of applications development using python:**1. Data Analytics  
   2. Web Application  
   3. Web Scrapping  
   4. Backend Scripts  
   5. Automation App  
   6. Gaming App  
   7. Animation  
   8. GUI  
   9. Scientific App  
   10. Automation Test Case  
   11. Networking & IOT
3. **Python Support:**1. Procedures Oriented (Functions)  
   2. Object Oriented (OOPs)  
   3. Module Programming (Modules)  
   4. Scripting Language (Interpretation)
4. **Features Of Python:**  
   1. Simple and easy to learn  
   2. Open Source  
   3. Dynamic typed programming language  
    1. Static typed pl  
    2.Dynamic typed pl  
   4. Library Supports  
    1. Development library  
    2. External library  
    3. Built in library (Standard library)  
   5. Dynamic memory allocation and deallocation  
    1. Object creation -> dynamic memory allocation  
    2. Garbage collection -> dynamic memory Deallocation  
   6. Embedded (implement python in other language applications)  
   7. Extensible (implement other language in python applications)
5. **Python Installation:  
    Mandatory** 1. Core Interpreter  
    2. Standard Lib  
    3. Development Lib  
    4. Executable Jar **Optional** 1. Python Manual  
    2. PIP  
    3. TCL / TK Idle  
    4. Test Suit  
    5. Launcher **Download and Install** - Select checkbox [] add python.exe to PATH  
    - Customize installation  
    - Customize installation by clicking on browse  
    - Click on Install  
    - Click on close
6. **Developing python files or python program or scripts:  
    Editors** Notepad  
    Note pad++  
    Idle  
    VI  
    Nano  
    Gedit  
    **IDEs** PyCharm  
    Eclipse  
    MyEclipse  
    NetBeans  
    VS Code
7. **Writing Code on IDLEs editor:** Open IDLEs editor  
    Click on file  
    Click on new file  
    #Codes  
    Save file with anyname.py extension in any location  
    Click on run   
    Click on run modules (f5)
8. **Python files according to PEP rules:  
    PEP** Python Enhancements Proposal Contains instructions to programmers.  
    **Pylint tool to check Codes** Install using pip  
    F: python3/Scripts>pip install pylint  
    Check  
    F: python3/Scripts/pylint>location python file
9. **PIP:** Application present in script folder in python software  
    Use to install external libraries.
10. **Developing Python files or Python programs on cloud:** - open pythonanywhere.con  
     - click on Start running python online in less a minute  
     - click on create a beginner account  
     - enter details and click on register  
     - login  
     - click on my dashboard  
     - click on file  
     - enter file name and click on new file  
     - write code  
     - click on save   
     - click on run
11. **Data types (specify how much memory and which type of data)** 1. Primitive type (fixed size of memory)  
     2. Reference type (dynamic size of memory)
12. **Data types in python** 1. Data type in class syntax  
     2. Standard data type in class form  
     1. int  
     2. float  
     3. complex  
     4. bool  
     5. none type  
     6. str  
     7. range  
     8. list  
     9. tuple  
     10. set  
     11. frozen set  
     12. dict  
     13. bytes  
     14. byte array  
     3. Categorized data types  
     1. Numeric  
     1. Int   
     2. Float  
     3. Complex  
     2. Bool  
     1.bool  
     3. Non type  
     1.noneType  
     4. Text type  
     1. str  
     ‘one line’, “one line”  
     “’multiple lines”’
13. **Reading data from keywords** 1. Input()  
     2. Type conversion  
     1. int()  
     2. float()  
     3. complex()  
     4. bool()  
     5. str()
14. **Slice operators  
    1. inclusive  
    2. exclusive**
15. **Types Of Objects** 1.Mutable Objects  
     2. Immutable Objects
16. **Operators  
    1. Magic Methods  
    2. Arithmetic Operators  
    3. Comparison Operators  
    4. Logical Operators  
    5. Identity Operators  
    6. Membership Operators   
    7. Bitwise Operators  
    8. Assignment Operators  
    9. Unary Operators**
17. **Expressions Evaluations**
18. **Blocks  
    1. Indentation**
19. **Control Flow Statements  
    1. Conditional Statements  
    2. Loping Statements  
    3. Conditions  
    4. Boolean value  
    5. if  
    6. else  
    7. elif  
    8. while  
    9. for  
    10. break  
    11. continue  
    12. pass  
    13. range(start**(inclusive)**, stop**(exclusive)**, step)**
20. **Methods**
21. **str objects methods  
    1. capitalize()  
    2. title()  
    3. lower()  
    4. upper()  
    5. isalpha()  
    6. isdigit()  
    8. isupper()  
    9. islower()  
    10. split()**
22. **list data type  
    1. list()  
    2. []  
    3. insertion order  
    4. duplicate elements  
    5. heterogenies  
    6. positive and negative indexing  
    7. mutable  
    8. len()  
    9. append()  
    10. extend()  
    11. count()  
    12. index()  
    13. remove()  
    14. pop()  
    15. clear()  
    16. copy()  
    17. reverse()  
    18. sort()  
    19. insert()  
    20. Unpacking Elements  
    21. Nested List  
    22. List Comprehension**
23. **tuple data type  
    1. immutable   
    2. tuple()  
    3. ()  
    4. immutable  
    5. elements (mutable or immutable)  
    6. insertion order  
    7. positive and negative indexing  
    8. heterogeneous elements  
    9. duplicate elements  
    10. Unpacking elements  
    11. count()  
    12. index()  
    13. Nested tuple  
    14. Tuple Comprehension**
24. **set data type  
    1. mutable   
    2. keys (immutable)  
    3. not insertion order  
    4. not duplicate keys  
    5. not indexing  
    6. heterogeneous keys  
    7. Union  
    8. Intersections  
    9. Different  
    10. Semantic difference  
    11. set()  
    12. {}  
    13. copy()  
    14. add()  
    15. remove()  
    16. discard()  
    17. pop()  
    18. clear()  
    19. union() / |  
    20. intersection() / &  
    21. difference() / -  
    22. semantic\_difference () / ^  
    23. update()  
    24. issuperset()  
    25. issubset()  
    26. isdisjoint()  
    27. difference\_update()  
    28. Nested Tuple  
    29. Unpacking  
    30. Set Comprehension**
25. **frozenset  
    1. frozenset()  
    2. immutable   
    3. keys (immutable)  
    4. not indexing  
    5. not duplicate keys  
    6. heterogeneous keys  
    7. Union  
    8. Intersections  
    9. Different  
    10. Semantic difference  
    11. union() / |  
    12. intersection() / &  
    13. difference() / -  
    14. semantic\_difference () / ^  
    15. update()  
    16. issuperset()  
    17. issubset()  
    18. isdisjoint()**
26. **dict data type (Dictionary)  
    1. group of items  
    2. Key Value pair(items)  
    3. dict()  
    4. {}  
    5. matable (dict object)  
    6. Keys (immutable)  
    7. Value (mutable or immutable)  
    8. heterogeneous (Keys and Values)  
    9. duplicate (Values)  
    10. insertion order  
    11. nested dictionary  
    12. dictionary comprehension**