DSCE
Dept. of Information Science & Engg

DAYANANDA SAGAR COLLEGE OF ENGINEERING
DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING

Question Bank

Course: Python Programming **Course code: 18IS5DEPYP**

Unit-1: Data types

1. What are the rules to form an identifier? Give three examples. (5m)
2. Describe the functions of bin(), hex(), int() and oct() functions with an example for each. (8m)
3. Discuss slice operations on strings with three examples (5m)
4. Give examples of complex numbers and how to separate them into real and imaginary parts (5m)
5. Discuss the functions i) isspace() ii) isupper() iii) isnumeric() iv) lower() v) upper() , giving example for each. (10m)
6. Discuss Floating Point data type (10m)
7. Describe the functions of a) abs(x) b) divmod(x, y) c) pow(x, y, z) d) int(s, base) e) oct(i) with an example for each. (10m)
8. Discuss the following string escape sequences a) \newline b) \\ c) \f d) \" (8m)
9. Discuss any three string handling methods with an example for each (6m)
10. Explain any three integer conversion functions with examples (6m)
11. Discuss strings data type. Explain with example any five string handling methods (10m)
12. Illustrate with examples the various data types available in Python. (10m)

13. Explain Identifiers and keywords with examples (10m)

14. What are Integral types? Explain in detail about Integral types with examples (10m)

15. What are Floating point Types? Describe Floating point number with examples. (10m)

16. Explain the following with examples:
    i) Complex Numbers ii) Decimal Numbers (10m)

17. What are Strings? How strings can be created? (5m)

18. Explain comparing Strings and Slicing and striding Strings with examples. (5m)

19. List and Explain string methods with examples. (10m)

20. What are String Operators? Explain. (8m)

21. Write a Python program to get the Python version you are using. (10m)

22. Write a Python program to create the variables of different data types and display. (10m)

23. Write a Python program to reverse a given string. (10m)

24. Write a Python program to demonstrate various methods supported on strings. (10m)

25. Write a Python program to check if string ends with one of the strings from a list
    My_list = [‘AA’,’BB’,’CC’]. (10m)

26. Write a Python program to demonstrate type conversion among different data types. (10m)

NOTE: Learn all the functions in the prescribed text book and not just the ones given in the Question Bank

DSCE
Dept. of Information Science & Engg

DAYANANDA SAGAR COLLEGE OF ENGINEERING
DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING

Question Bank

Course: Python Programming **Course code: 18IS5DEPYP**

Unit-1: Collection Data types, Control Structures and functions

1. What are sequence type? List them. Discuss data type tuple and the methods used with examples (10m)
2. What are dictionary types? Give five different ways to create dictionary with examples. (8m)
3. Explain the operation of the following iterable function with an example: sorted(i,key,reverse) (5m)
4. Explain the operation of the following functions on list

   a) append() b) count() c) pop() d) reverse() e) index() f) sort() (10m)
5. Describe set type in python and functions that can be used to operate on sets with examples (10m)
6. What are the features of tuple data type? Explain with example indexing in tuple. (10m)
7. Explain with example, count(), index() in tuple type (5m)
8. Explain the different ways in which lists are created. (5m)
9. Explain any five lists methods with examples (10m)
10. Discuss mapping types (10m)
11. Explain any five iterable functions/operators (10m)
12. Explain Tuple and Named Tuple data type in detail. (10m)

13. Illustrate list functions and Methods with an examples (10m)

14. Explain Set Types? List any 10 Set Methods and Operators. (10m)

15. Explain Dictionaries and dictionary methods. (10m)

16. Illustrates with examples, Iterators and iterable operations and Functions. (10m)

17. Explain the concept of dictionary comprehension, default dictionary, ordered dictionary (10m)

18. Explain in detail python looping statements with necessary syntax and examples. (10m)

19. Explain in detail conditional statements with necessary syntax and examples. (10m)

20. Explain the working of the following with examples:
    (i) break (ii) continue (iii) pass (10m)

21. Write a Python program to sum and get multiplies of all the items in a list. (10m)

22. Write a Python program to get the largest and smallest number from a list. (10m)

23. Write a Python program to count the number of characters in a string.
    Sample String : 'Dayananda sagar'
    Expected Result : {'D': 2, 'a': 6, 'y': 1, 'n': 2, 's': 1, 'g': 1, 'r': 1} (10m)

24. Write a Python program to count the number of strings where the string length is 2 or more and the first and last character are same from a given list of strings.
    Sample List : ['abc', 'xyz', 'aba', '1221']
    Expected Result : 2 (10m)

25. Write a Python program to get the 4th element and 4th element from last of a tuple. (10m)

26. Write a Python program to reverse a tuple. (10m)

27. Write a Python program to replace last value of tuples in a list.
    Sample list: [(10, 20, 40), (40, 50, 60), (70, 80, 90)]
    Expected Output: [(10, 20, 100), (40, 50, 100), (70, 80, 100)] (10m)

28. Write a Python program to sort (ascending and descending) a dictionary by value. (10m)

29. Write a Python program to find the list of words that are longer than n from a given list of words. (10m)

30. Write a Python program to count the occurrences of each word in a given sentence. (10m)

NOTE: Learn all the functions in the prescribed text book and not just the ones given in the Question Bank

DAYANANDA SAGAR COLLEGE OF ENGINEERING
DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING

Question Bank

Course: Python Programming **Course code: 18IS5DEPYP**

Unit-1: Exception handling, Modules, Object Oriented Programming

NOTE: Learn all the functions in the prescribed text book and not just the ones given in the Question Bank

1. Explain any five exception errors with examples. (10m)
2. Explain try except and try finally exceptions with the control flow. (10m)
3. Explain with example, how unhandled exceptions are dealt with?
4. Explain exception handling? Write a program to catch i/o error. (5m)
5. What is a package? How is a package used in a python program? Describe with a simple program. (10m)

Note: write a sample program to show how package is created.

6. Describe the use of module with a simple program. (6m)
7. Explain Exception Handling in detail. (10m)
8. Describe the different ways of Raising Exceptions. (10m)
9. What is a Custom Function? Explain with an example. (10m)
10. Explain the Following

    I. Names and Docstrings II. Arguments and parameter Unpacking

11. III. Lambda Functions IV. Assertions (10m)
12. Illustrate with Example accessing of variables in the Global Scope. (10m)
13. Explain Modules and Packages with an Example.
14. What is Custom Modules? Explain in detail. (10m)

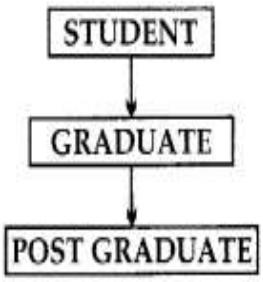
P.S: Learn to write code using different control structures and functions

15. What is Object Oriented Programming? List some of its advantages. (6m)
16. Differentiate between an object and a class. Explain polymorphism with an example. (10m)

17. What is inheritance? Explain the different types with examples. (10m)

18. How data encapsulation and data abstraction are implemented in Python? Explain with an example. (6m)

19. Consider the figure given below and answer the questions that follows:



i. Name the base class and the derived class.

ii. Which concept of OOP is implemented in the figure given above?

20. Examine the concept of overriding method? Give an example for the same. (6m)

21. Write a program that uses an area() function for the calculation of area of a triangle or a rectangle or a square. Number of sides are (3, 2 or 1). suggest the shape for which the area is to be calculated. (10m)

22. Defining the following with examples.

i. Creating a class ii. Constructor iii. The self variable (10m)

23. Explain the super( ) method with two suitable examples. (6m)

24. What is a class? What is the relation between an object and a class? Write a program which shows how to define a class, how to access member functions and how to create and access objects in Python. (10m)

DSCE
Dept. of Information Science & Engg

DAYANANDA SAGAR COLLEGE OF ENGINEERING
DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING

Question Bank

Course: Python Programming **Course code: 18IS5DEPYP**

Unit-4: DEBUGGING, TESTING AND PROFILING, REGULAR EXPRESSIONS

NOTE: Learn all the functions in the prescribed text book and not just the ones given in the Question Bank

1. How python works on Debugging? Explain in detail About Dealing with Run time Error and Syntax Error. (10m)
2. What is Unit testing? How do you perform unit testing using built in libraries of python? (10m)
3. Explain Unit Testing and Profiling with Example. (10m)
4. What is a debugger? Explain in detail about dealing with different types of errors. (10m)
5. Create a program and unittest to compute the area of a rectangle. (5m)
6. Examine the working of Test-Driven Development (TDD). (8m)
7. What is profiling? Why do we need Python Profilers? (8m)
8. Illustrate how to investigate the performance of code with examples. (10m)
9. How to use Profile to modify reports? How to report the data collected? (10m)
10. How to visualize cProfile reports? (6m)
11. List the categories of Regular Expression patterns available in Python. Explain in detail. (10m)
12. What are Assertions and Flags? List the Symbols of Regular Expressions Assertions. (10m)
13. Explain Regular Expressions Module Functions with examples. (10m)
14. Explain the five main uses of regular expression. (5m)
15. Explain the purpose of regular expression in Python. (5m)

16. Explain the meaning of the following in regular expression : i) \d ii) e? or e{0,1}
iii) e*? or e{0,}? iv) e+? e(m, n) (10m)

17. Explain the following functions/object methods with respect to regular expressions with examples
i) findall(r, s, f) ii) compile(r, f) iii) subn(r, x, s m, f) iv) split(r, s, m, f) v) match vi) search
(10m)

18. Write a regular expression 1) beginning with ab 2) which has aba (8m)

19. Explain any five assertions used in regular expression module (10m)

20. What are the different available flags in re module? (5m)

21. Write a python script to return the first word of the given string using RE (5m)

22. Write a python script to return the first two character of each word in a given string using RE
(5m)

23. Write a python script to return the domain type of given email-ids using RE (5m)

24. Write a python script to return date from given string using RE (5m)

25. Write a python script that returns all words of a string those starts with vowel using RE. (5m)

26. Write a python script that Validates a phone number (phone number must be of 10 digits and starts with 8 or 9) using RE. (5m)

DSCE
Dept. of Information Science & Engg

DAYANANDA SAGAR COLLEGE OF ENGINEERING
DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING

Question Bank

Course: Python Programming **Course code: 18IS5DEPYP**

Unit-4: DATABASE PROGRAMMING, NETWORKING

NOTE: Learn all the functions in the prescribed text book and not just the ones given in the Question Bank

1) Explain the following functions with respect to database programming:
   a) close() b) rowcount() c) fetchall() d) execute() e) cursor() f) commit()
   g) rollback() h) arraysize() i) description() and write a program using above functions (16m)
2) Explain DBM Database with Example. (10m)
3) Illustrate with an example Of SQL Database (10m)
4) Write a note on database programming in python. (10m)
5) Consider an inventory of pets that we need to modify as pets are added to or removed from a fictional pet shop.

species	Availbility
Dog	5
Cat	9

   a) Create this table in SQLite.
   b) Insert rows of data into the table
   c) Read Data from the SQLite Database
   d) UPDATE the table to change Availbility of Dog to its new value of 10.
6) Examine the shelve module in Python's standard library with an example. (10m)
7) Inspect the different connection object methods in database API. (8m)
8) Write a python program to demonstrate the use of connect() function. (5m)
9) Examine Cursor Object Attributes and Methods in DB-API. (16m)
10) Write a python program to create an employee database table. (10m)

11) Explain the following socket methods:
    a) bind() b) listen() c) accept() d) connect() (8m)
12) Write a program to create TCP Client. (10m)
13) Write a program to create TCP Server. (10m)
14) What is socket programming? How do you create sockets? Inspect the syntax and use of server and client socket methods? (12m)
15) Explain any five methods in socket module of python. (10m)
16) Explain Creating a TCP Client with Example. (10m)
17) Explain Creating a TCP server with Example. (10m)
18) Illustrate Client-server communication using python pickle module. (16m)