`Academic Year (2019-20)

Department of Information Technology (Under Graduate Course) B.Sc.IT

Question Bank

Semester – III

Python Programming(USIT301)

Questions: Advanced Learner

1. What is data type? List out the types of data types with example.
2. Implement the python program to calculate total and average marks based on input.
3. Explain break and continue statement with the help of for loop with an example
4. Explain expressions in python with order of evaluation with example
5. What is a recursive function?
6. Write about class constructor(_init_()),self-variable.
7. Write a python code to check if the given number is prime or not using modules.
8. Write a syntax for Handling Exceptions with example i try ii try-except iii try-except-else iv try-except-else-finally
9. Explain about Dates and Times .
10. Explain about Python Runtime Services .

Questions: Slow Learner

1. What is data type? List out the types of data types with example.
2. Explain variable assignment with suitable examples.
3. List various types of operators in Python and write any 4 types of operators.
4. Explain the syntax of the following statements i) for loop ii) while loop iii) if - else iv) if-elif-else
5. Define function? Write its syntax.
6. What is inheritance? Illustrate types of inheritance with python code.
7. What is a module? How many ways to import modules in python?
8. Describe any one regular expression with an example?
9. Explain about reading and writing files in python.
10. Explain about Data Compression .

Assignments

1. Write a python program to find the given year is leap or not
2. Differentiate between the tuple and sets in python.
3. Write a function to display ASCII Code of entered character .
4. How to create a module?
5. What is a turtle with an example?

Data Structures(USIT302)

Advanced Learner

1. Explain the complexity of an algorithm with its types.
2. Define Growth Rate of an algorithm with diagrams.
3. How to delete node from an existing linked list? Give example.
4. What are the two types of cloning techniques in Linked List?
5. Convert the following infix to postfix: D = A + B * C.
6. What are different ways of Representing Queue?

7. Write a C++ Program for Sequential Search.
8. How Binary Search Trees are Represented in Memory? Explain.
9. Explain quadratic probing using Example.
10. Explain Warshall's Algorithms.

Slow Learner

1. Explain data and information with example.
2. What is data structure? Give its classification.
3. What is memory allocation and De-allocation?
4. Explain a circular linked list with its types.
5. What are different Operations on Stack?
6. Differentiate between Stack and Queue.
7. Explain the Selection sort.
8. What are different Tree Terminologies?
9. Define Double Hashing.
10. What is Graph and its types?

Assignment

1. What is the importance of algorithm analysis?
2. How to search an element in an array? Give example.
3. What are the two types of cloning techniques in Linked List?
4. Write short notes on Arithmetic Expressions in Stack.
5. What do you mean by Traversing? Explain.

Computer Networks(USIT303)

Questions: Advanced Learner

1. Differentiate between Circuit switched networks and Packet switched networks.
2. Describe the Lifetime maturity levels of RFC.
3. Explain the encapsulation and de-capsulation operation in TCP/IP Protocol suite.
4. Which characteristics are important in general for the quality of the network / network performance? Explain.
5. Explain the following: i) Time Domain- Frequency Domain ii) Composite Signal.
6. Explain the following line Coding Schemes: Unipolar , Bipolar.
7. Write a short note on PCM.
8. What are the types of analog to analog modulation? Explain any one in detail.
9. Write a short note Delta Modulation.
10. Explain Constellation Diagram

Questions: Slow Learner

1. What is data Communication? On which fundamental characteristics the effectiveness of data communication depends? Explain.
2. What is topology? What are its types? Explain any one in detail.
3. What is the concept of Protocol Layering in network model? Explain.
4. Write a short Note on Periodic Signal.
5. Explain transmission impairments.
6. List and explain the various characteristics of Line Coding Schemes.
7. Differentiate between Parallel and serial transmission.
8. What are the types of DAC techniques? Explain any one in detail.
9. Explain Amplitude Modulation.
10. Short note on FSK.

Assignments

1. Differentiate between Ring topology and Mesh topology.
2. Write a short note on OSI model.
3. What are the characteristics/ Properties of digital signal? Explain.
4. Draw the graph of the Polar line coding for NRZ, RZ and Manchester , differential Manchester techniques for the data stream transmitted as 11001010.
5. Explain ASK.

Database Management Systems(USIT304)

Questions: Advanced Learner

1. What do you understand by Functional dependency?
2. Explain the term candidate key using functional dependency.
3. Explain the term atomicity in DBMS.
4. Explain the anomalies of DBMS.
5. What is redundancy? What are the problems caused by the redundancy?
6. If R={ A,B,C,D,E } and FD"s F={ A→ C, AC→ D, E→ AD, E→H} List all the candidate keys.
7. Compute canonical cover Fc for the R= {A, B, C, D} and FD"s= { A→BC, B→C, A→B , AB→C, AC→D}.
8. Explain database decomposition? Why it is necessary.
9. Explain BCNF in detail.
10. Explain lossy decomposition in detail.

Questions: Slow Learner

1. Define Database? Discuss about applications of Database Systems?
2. Differentiate between Database Management System and file based system.
3. Define internal architecture of DBMS.
4. Explain the role of DBA.
5. Explain the advantages of DBMS.
6. What is Data Abstraction? Explain about different views of data?
7. Define Instance and Schema? List different data models and explain?
8. Draw the Architecture of Database?
9. Discuss about Database users and Administrators
10. Draw an ER diagram for Ternary Relationship set with suitable examples?

Assignments

1. What do you understand by generalization and specialization attributes in DBMS?
2. Define Entity, Attributes, Entity set, relationship with appropriate notations?
3. What is a weak entity? Explain with an example?
4. Differentiate between DBMS and RDBMS.
5. Explain the term cardinality ratio with an example.

Applied Mathematics(USIT305)

Please refer Mathematics Q.Bank folder