Academic Year (2020-21)

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

Question Bank

Semester – III

Python Programming(USIT301)

Questions : Advanced Learner

1._Which one of the following has the highest precedence in the expression?

A. Exponential
B. Addition
C. Multiplication
D. Parentheses

2. What will be the error of the following code?

```
b = "ab"
c=ab//2
print(c)
```

A. NameError
B. SyntaxError
C. TypeError
D. KeyError

3. What will be the output of below Python code?

```
str1="Application"
str2=str1.replace('a', 'A')
print(str2) .
```

A. application
B. Application
C. ApplicAtion
D. application

4. Which of the following function headers is correct?

A. def fun (a = 2, b = 3, c)
B. def fun (a = 2, b, c = 3)
C. def fun (a, b = 2, c = 3)
D. def fun (a, b, c = 3, d)

5.What is the output for the following comparison operator?

```
t1=(10,20,30,40,50)
t2=(10,20,30,40,50)

t1>t2
```

A. True
B. False
C. You cannot compare two tuples.
D. It will print t1 & t2

6.What will the list ( ) return as output?

```
t1=(10,20,30,40,50)
b=list(t1)
print(b)
```

A. (10,20,30,40,50)
B. Tuple does not support list function
C. [10,20,30,50,50]
D. [10,20,30,40,50]

7.What is the correct syntax to access the private variable data hidden?
A. Object___Variable
B. Object.__variable
C. Object.__varaible__
D. Object.variable

8.How do we declare a class as static?
A. Static
B. Static method
C. @staticmethod
D. Static class_name

9. What is the use of the place() function in tkinter Python?
A. To put the widget on the screen
B. To put the widget on the Button
C. To put the widget on the background
D. To destroy the widget

10. What do we use to change the background color of any widget?
A. Background
B. Fg
C. Bg
D. bgroud

Questions : Slow Learner

1. What is the output of this expression, 5*1**5?
A. 25
B. 75
C. 5
D. 1

2. What error occurs when you execute the following Python code snippet? apple = mango.
A. SyntaxError
B. NameError
C. ValueError
D. TypeError

3. Python was released publicly in-
A. 1941
B. 1971
C. 1981
D. 1991

4. Which of the following functions converts the strings to all uppercase?
A. upper()
B. title()
C. isdecimal()
D. lower ()

5. What will be the output when we execute a list (“Python”)?
A. (“Python)
B. [“Python”]
C. [Python]

D. ['P','y','t','h','o','n']

6. What will be the output for max ( ) in tuple?

```
a=(1,2,3.4,'h')
print(max(a))
```

A. 'h'
B. 3.4
C. Error
D. Max function is not supported by tuple.

7._____refers to defining a new class with no modification to an existing class.

A. Static method
B. Constructor
C. Inheritance
D. Polymorphism

8. Poly means _____and Morphs means _____.

A. Many ,type
B. Form ,type
C. Many, forms
D. Structure, data

9.How do we install tkinter in the system ?

A. pip install python
B. tkinter install
C. pip install tkinter
D. tkinter pip install

10. Minimum number of arguments we pass in a function to create a rectangle using canvas tkinter?

A. 2
B. 4
C. 6
D. 5

Assignments

1. What will be the output of the following Python code?

```
i = 0
while i < 5:
    print(i)
    i += 1
    if i == 3:
            break
    else:
            print(0)
```

A. 0 0 1 0 2
B. 01230
C. error
D. 01234

2. What is a variable defined outside a function referred to as?

A. A static variable
B. A global variable
C. A local variable
D. An automatic variable

3. If a=[10,'h',20,50], what will be sum(a)?

A. 80

B. ‘h’
C. Error
D. 80h

4. Constructor is used to create a _____.
A. Class
B. Object
C. Method
D. Memory

5.Define Overloading.
A. Providing less than two functions with the same name.
B. Providing more than one function with a different name.
C. Providing more than one function with the same parameter.
D. Providing more than one function with the same name & parameter list.

Data Structures(USIT302)

Questions : Advanced Learner

1. Complexity of the algorithm is the _____ and _____requirement of algorithm
A. Data and information
B. File and system
C. Time and space
D. Input and output

2.If the running time of algorithm is longest for all inputs then it is called _____ complexity
A. Best case
B. Worst case
C. Average case
D. Binary case

3.For _____ we need to locate the position of the node after which we want to insert the new node.
A. deleting node
B. searching node
C. inserting node
D. traversing node

4. To insert an element in sorted linked list, list should be _____
A. Existing
B. Complete
C. Full
D. Sorted

5. The prefix form of an infix expression p + q − r t* is
A. + pq − rt
B. − +pqr t*
C. − +pq*rt
D. - +*pqrt

6. In Reverse Polish notation, expression A*B+C*D is written as
A. AB*CD*+
B. A*BCD*+

C. AB*CD+*
D. A*B*CD+

7. The node which does not have any child node is known as _____ node
A. Max
B. Root
C. Tertiary
D. Leaf

8. _____ tree is used to enhance the performance of binary tree
A. Tree enhancer
B. Binary search tree
C. Traversal tree
D. Sorted tree

9. When a vertex does not belong to any edges , then it is known as _____ vertex
A. Equal
B. Isolated
C. Parallel
D. Same

10. When the start and end vertex is same in a graph, _____ is formeD.
A. Open loop
B. Cycle
C. Bucket
D. Frame

Questions : Slow Learner

1._____ is a set of characteristics of algorithm
A. Process and Input
B. Time and schedule
C. Planning and Process
D. No input and no output

2. _____ type of data structures will store data of different data types
A. Static
B. Non-Homogeneous
C. Structural
D. Homogeneous

3.. Which of the following operations is performed more efficiently by doubly linked list than by singly
linked list?
A. Deleting a node whose location in given
B. Searching of an unsorted list for a given item
C. Inverting a node after the node with given location

D. Traversing a list to process each node

4. Before inserting a node we need to check _____
A. list is empty or not.
B. list exists or not
C. list can be traversed or not
D. list has to be updated

5. When a stack is organized as an array, a variable named Top is used to point to the top element of the stack. Initially, the value of Top is set to_____to indicate an empty stack.
A. -1
B. 0
C. 1
D. X

6. Jan Lukasiewicz, who suggested two alternative notations to represent an arithmetic expression belonged to which nationality?
A. English
B. Polish
C. German
D. Swedish

7. The inorder traversal of tree is as _____
A. Left-right-root
B. Root-right-left
C. Left-root-right
D. Root-left-right

8. The preorder traversal of tree is as _____
A. Left-right-root
B. Root-right-left
C. Left-root-right
D. Root-left-right

9. When the vertexes are connected using specific direction it is known as _____
A. Simple graph
B. Close graph
C. Directed graph
D. Undirected graph

10. In Floyd warshall the first step will involve to remove all the _____
A. Edges
B. Vertices
C. Self loops
D. Path

Assignments

1.The dimension of one dimensional array starts with _____
A. Zero

B. One
C. Two
D. Even numbers

2. The postfix form of the following infix notation is : (A + B. * (C*D − E. * F
A. AB + CD*E − *F*
B. AB+ CDE + − * F*
C. AB+ CD − EF + − **
D. ABCDEF* − + * +

3. What are the sequence of popped out values if the sequence of operations - push(1. , push(2. , pop, push(1. , push(2. , pop, pop, pop, push(2. , pop are performed on a stack.
A. 2, 2, 1, 1, 2
B. 2, 2, 1, 2, 2
C. 2, 1, 2, 2, 1
D. 2, 1, 2, 2, 2

4. The postorder traversal of tree is as _____
A. Left-right-root
B. Root-right-left
C. Left-root-right
D. Root-left-right

5. A spanning tree is a subset of graph where all vertices are covered with _____ possible number
of edges
A. Maximum
B. Zero
C. Minimum
D. Infinity

Computer Networks(USIT303)

Questions: Advanced Learner

a) The _____ of a signal is its absolute value of its highest intensity proportional to the energy it carries
    a) Frequency
    b) Throughput
    c) Delay
    d) peak amplitude
b) In _____Transmission we send 1 start Bit (0) at the beginning and one or more stop bits (1s) at the end of each byte.
    a) synchronous transmission
    b) asynchronous transmission

c) isochronous transmission
d) Chronos transmission

c) The _____ technique expands the bandwidth of a signal by replacing each data bit with n bits using a spreading code.
   a) FDM
   b) DSSS
   c) FHSS
   d) TDM

d) FHSS uses _____
e) Frequency synthesizer
f) Multiplexer
g) Hopping machine
h) De-multiplexer

5. _____ means the sending station must not send frames at a rate faster than the receiving station can absorb them
a) error control
b) frame control
c) data control
d) flow control

6. In _____ the available bandwidth of a link is divided into frequency bands
a) CDMA
b) TDMA
c) FDMA
d) SDMA

7._____Routing table is the one that is created once manually but it is updated automatically whenever there is some change in the internet
a) Static
b) Dynamic
c) Modified
d) updated

8. In _____ the destination host and the source host are in the different physical network.
a) Presentation
b) Network
c) Data-Link
d) Physical

9. In case of_____ a logical window is maintained in the buffer of the sender
a) user datagram protocol
b) sliding window protocol
c) transmission control protocol
d) simple protocol

10. _____ Is a protocol used mainly to access web pages on the world wide web
a) HTML
b) web documents
c) HTTP
d) Webpages

Questions: Slow Learner

1. Which of the following is not one of the components of a data communication system?
a) Message

b) Sender
c) Communication
d) receiver

2. TCP is _____
a) transmission control protocol
b) transfer control protocol
c) transfer communication protocol
d) transmission communication protocol

3. In a _____network, each packet in a message may follow a different path.
   a) datagram
   b) virtual-circuit
   c) circuit-switched
   d) Ring

4. Packet switching can be divided into _____ categories.
   a. two
   b. three
   c. four
   d. five

5. In Cellular system cluster contains _____ cells.
   a. 5
   b. 8
   c. 7
   d. 4

6. _____ in the data link layer separates a message from one source to a destination, or from other messages going from other sources to other destinations.
   a) Digitizing
   b) Controlling
   c) Framing
   d) decapsulation

7. The _____ technique is one of the open-loop congestion policies.
   a) backpressure
   b) choke packet
   c) implicit signaling
   d) retransmission policy

8. IP is a _____ protocol.
   a) connection-oriented unreliable
   b) connection-oriented reliable
   c) connectionless unreliable
   d) connectionless reliable

9. A standard mechanism provided by internet which helps in copying a file from one host to another is known as _____.
   a. SMTP
   b. FTP
   c. DNS server
   d. Telnet

10. This timer is used to deal with the situation when the receiver advertises the window size as 0 that leads to window shut down at the sender
   a. time wait
   b. keepalive

c. Retransmission
d. Persistent

Assignments

1. When a user wants to access an application program or utility located on a remote machine, he or she performs _____ login.
   a) local
   b) remote
   c) local or remote
   d) guest
2. In IPv6, the _____ field in the base header restricts the lifetime of a datagram.
   a) version
   b) priority
   c) hop limit
   d) flow count
3. Bluetooth with multiple _____ form a network called a _____.
   a) scatternet; piconets
   b) piconets: scatternet
   c) piconets: bluenet
   d) bluenet; scatternet
4. Data-link layer of a point-to-point link has _____ sublayer(s).
   a) one
   b) two
   c) no
   d) four
5. Two common scrambling techniques are _____.
   a) NRZ and RZ
   b) AMI and NRZ
   c) B8ZS and HDB3
   d) Manchester and differential Manchester

Database Management Systems(USIT304)

Questions: Advanced Learner

1. __How to give single line comment in PL/SQL
a. //
b. /*
c. --
d. <--

2. PL/SQL is _____ to SQL.
a. new
b. extension
c. main
d. important

3. Find invalid declaration
a. v_number1 NUMBER(10);
b. v_num NUMBER := 100;
c. v_astring VARCHAR2(2) NOT NULL;
d. v_str VARCHAR2(1) NOT NULL := ‘Y’;

4. Which package is get used to print output on screen
a. DBMS_PRINT
b. DBMS_OUTPUT
c. DBMS_SHOW
d. DBMS_COUT

5. Which one is invalid procedure?
a. PUT
b. PUT_LINE
c. NEW_LINE
d. NEW

6. PL/SQL groups the syntax of the programs into units called _____.
a. sections
b. blocks
c. parts
d. queries

7. PL/SQL named blocks are called _____
a. subprograms
b. anonymous
c. code
d. query

8. PL/SQL unnamed blocks are called _____
a. subprograms
b. anonymous
c. code
d. query

9. _____ can be referred to as either function or procedures.
a. subprograms
b. anonymous
c. code
d. query

10. DECLARE section begins with the keyword DECLARE and ends when the keyword _____
a. END
b. BEGIN
c. END DECLARE
d. STOP

Questions: Slow Learner

1. What do you mean by one to many relationship between Teacher and Class table?
a) One class may have many teachers
b) One teacher can have many classes
c) Many classes may have many teachers
d) Many teachers may have many classes

2. In one-to-many relationship, the table on 'many' sides is called _____
a) Parent
b) Child
c) Sister
d) Master

3. Which of the following enables us to view data from a table based on a specific criterion
a) Form
b) Query
c) Macro
d) Report

4. This key that uniquely identifies each record is called :
a) Primary Key
b) Key Record
c) Unique Key
d) Field Name

5. Which name must be unique within a database ?
a) Table
b) Field
c) Record
d) Character

6. In an ER Diagram an entity set is represented by_____.
a) Rectangle
b) Ellipse
c) Diamond
d) Circle

7. The collection of related data is termed as _____
a) Data
b) Database
c) DBMS
d) Information

8. The process of hiding irrelevant details from the user is called
a) data abstraction
b) data encryption
c) data integrity
d) data encapsulation

9. The total number of attributes which in the relation is called the _____ of the relation.
a) Table

b) Tuple
c) Degree
d) Attribute

10. _____ is an extension of the Hierarchical model.
a) Relational Model
b) Data Model
c) Network Model
d) ER-Model

Assignments

1. Which one of the following is a set of one or more attributes taken collectively to uniquely identify a record?

a. Candidate key
b. Sub key
c. Super key
d. Foreign key

2. Which one of the following attributes can be taken as a primary key?

a. Name
b. Street
c. Id
d. Department

3. An attribute in a relation is a foreign key if the _____ key from one relation is used as an attribute in that relation.

a. Candidate
b. Primary
c. Super
d. Sub

4. A _____ integrity constraint requires that the values appearing in specified attributes of any tuple in the referencing relation also appear in specified attributes of at least one tuple in the referenced relation.

a. Referential
b. Referencing
c. Specific
d. Primary

5. A set of possible data values is called

a. Attribute
b. Degree
c. Tuple
d. Domain

Applied Mathematics(USIT305)

ADVANCED LEARNER

1) If a matrix A is both symmetric and skew symmetric then matrix A is
a) a scalar matrix
b) a diagonal matrix
c) a zero matrix of order n × n
d) a rectangular matrix

2) The eigenvalues are roots of
a) The characteristic equation
b) Rank of matrix
c) Polynomial
d) Eigenvector

3) Determine the order and degree of the differential equation

$$2\square\ \square^4\ \square/\square\square^4 + 5\square^2\ (\square\square/\square\square)^3 - \square\square = 0$$

a) Order=4 and Degree=1
b) Order=3 and Degree=1
c) Order=1 and Degree=4
d) Order=1 and Degree=3

4) Which of the following equations is an exact differential equation?
a) $(\square^2 + 1)\ \square\square + \square\square\ \square\square = 0$
b) $(\square + \square)\ \square\square + 2\square\ \square\square = 0$
c) $2\square\square\ \square\square + (\square^2 - 2)\ \square\square = 0$
d) $\square^2\ \square\square + (\square^2 - 2)\ \square\square = 0$

5) Convolution of e^t and t is
a) e^t-t-1
b) e^(-t)-t-1
c) e^t+t+1
d) e^(-t)+t+1

6) Inverse Laplace transform of F(s)=log⁡((s+4)/(s+8))
a) e^(-8t)-e^(-4t)
b) e^(-8t)+e^(-4t)
c) e^(-8t)-e^(-4t))/t
d) e^(-8t)+e^(-4t))/t

7) The triple integral of a function f(x,y,z)=1 over a solid V gives
a) Surface area of the region V
b) Volume of the solid bounded by V
c) Hyper-volume of the hyper-solid
d) None of the above

8) The equation $\square^2/\square^2 + \square^2/\square^2 = 1$ represents
a) Parabola
b) Circle
c) Ellipse
d) Hyperbola

9) Error function is an
a) Odd function of x
b) Even function of x
c) Neither odd nor even
d) Can't say

10) Error function of ∞ is
a) 0
b) 1

c) ∞

d) -1

SLOW LEARNER

1) **T**o find rank of matrix using Normal form which operations are allowed

a) Only row

b) Only column

c) Both row and column

d) Row or column

2) Cayley-Hamilton theorem states that Every matrix satisfy its own _____

a) Characteristic Equation

b) Differential Equation

c) Potential Equation

d) Caley's Equation

3) Which of the following is Clairaut's form of Differential equation?

a) $y = xp + f(p)$

b) $x = yp + f(p)$

c) $p = xy + f(x)$

d) $p = xy + f(y)$

4) Solution of the differential equation

a) Parabola

b) Circle

c) Straight line

d) Hyperbola

5) The Laplace transform can also be used to solve_____

a) Linear equation

b) Differential equation

c) Binomial equation

d) Canonical equation

6) In L(f(t), f(t) is defined for all _____ values of t

a) Real

b) Integer

c) Negative

d) Positive

7) The double integral of a function z=f(x,y) over a region R gives

a) Length of the interval

b) Area of the region R

c) Volume of the solid bounded by z and R

d) Hyper-volume of the hyper-solid

8) While changing the integral from Cartesian coordinates to polar coordinates over a circle, the following substitutions are made

a) $x = r \sin\theta, y = r \cos\theta$

b) $x = r \cos\theta, y = r \sin\theta$

c) $x = \sin\theta, y = \cos\theta$

d) $x = \cos\theta, y = \sin\theta$

9)The value of erf(-x)+ertc(x)=

a) 2
b) 1
c) 3

d) 4

10) What is the value of $\beta(3,2)$?

a) 1/14
b) 1/16
c) 1/12

d) 1/10