

NCERT के कक्षा 11 के पाठ्यक्रम पर आधारित Chapterwise MCQs

1. Computer System

1. Which of the following devices provide a means of communication between a computer and outer world?
 - (1) I/O
 - (2) Storage
 - (3) Compact
 - (4) Drivers
2. Which of the following type of computer is mostly used for automatic operations?
 - (1) analog
 - (2) digital
 - (3) hybrid
 - (4) remote
3. Which of the following are physical devices of a computer?
 - (1) Hardware
 - (2) Software
 - (3) System Software
 - (4) Package
4. The 'heart' of the processor which performs many different operations _____
 - (1) Arithmetic and logic unit
 - (2) Motherboard
 - (3) Control Unit
 - (4) Memory
5. Saving data and instructions to make them readily available is the job of _____
 - (1) Storage Unit
 - (2) Cache Unit
 - (3) Input Unit
 - (4) Output Unit
6. Electronic circuits that operate on one or more input signals to produce standard output _____
 - (1) Series circuits
 - (2) Parallel Circuits
 - (3) Logic Signals
 - (4) Logic Gates
7. Brain of computer is _____
 - (1) Control unit
 - (2) Arithmetic and Logic unit
 - (3) Central Processing Unit
 - (4) Memory
8. Causing the CPU to step through a series of micro operations is called _____
 - (1) Execution
 - (2) Runtime
 - (3) Sequencing
 - (4) Pipelining
9. The length of a register is called _____
 - (1) word limit
 - (2) word size
 - (3) register limit
 - (4) register size
10. Which of the following is the fastest means of memory access for CPU?
 - (1) Registers
 - (2) Cache
 - (3) Main memory
 - (4) Virtual Memory

ANSWERS

1. (1)	2. (3)	3. (1)	4. (1)	5. (1)
6. (4)	7. (3)	8. (3)	9. (2)	10. (1)

2. Encoding Schemes & Number System

1. Which of the following is not a positional number system?
 - (1) Roman Number System
 - (2) Octal Number System
 - (3) Binary Number System
 - (4) Hexadecimal Number System
2. The binary equivalent of the decimal number 10 is _____
 - (1) 0010
 - (2) 10
 - (3) 1010
 - (4) 010
3. The octal equivalent of 1100101.001010 is _____
 - (1) 624.12
 - (2) 145.12
 - (3) 154.12
 - (4) 145.21
4. The maximum number of bits sufficient to represent an octal number in binary is _____
 - (1) 4
 - (2) 3
 - (3) 7
 - (4) 8
5. Which of the following is not a valid representation in bits?
 - (1) 8-bit
 - (2) 24-bit
 - (3) 32-bit
 - (4) 64-bit
6. What does ASCII stand for?
 - (1) American Standard Code for Information Interchange
 - (2) American Scientific Code for Information Interchange
 - (3) American Scientific Code for Interchanging Information
 - (4) American Standard Code for Interchanging Information
7. Any set of digits or alphabets are generally referred as _____
 - (1) Characters
 - (2) Symbols
 - (3) Bits
 - (4) Bytes
8. Another name for base is _____
 - (1) root
 - (2) radix
 - (3) entity
 - (4) median

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- ANSWERS

1. (1)	2. (3)	3. (2)	4. (2)	5. (2)
6. (1)	7. (1)	8. (2)	9. (4)	10. (2)

3. Emerging Trends

7. Blockchain is _____.
(1) Currency
(2) A centralized ledger
(3) A type of cryptocurrency
(4) A distributed ledger on a peer to peer network

8. According to analysts, for what can traditional IT systems provide a foundation when they're integrated with big data technologies like Hadoop?
(1) Big data management and data mining
(2) Data warehousing and business intelligence
(3) Management of Hadoop clusters
(4) Collecting and storing unstructured data

9. Facebook Tackles Big Data With _____ based on Hadoop.
(1) 'Project Prism' (2) 'Prism'
(3) 'Project Big' (4) 'Project Data'

10. Choose the one which is a potent technology for cloud-building.
(1) HyperCube (2) vCube
(3) vSphere (4) All of the above

- ANSWERS

1. (1)	2. (3)	3. (1)	4. (4)	5. (4)
6. (1)	7. (4)	8. (1)	9. (1)	10. (3)

4. Introduction to Problem Solving

- (1) Heterogeneous only
(2) Homogeneous Only
(3) Both hetero and homogeneous
(4) Neither hetero nor Homo

4. Which of the following is an example of artificial intelligent agent/agents?
(1) Autonomous Spacecraft
(2) Human
(3) Robot
(4) All of the mentioned

5. Application of Machine learning is _____.
(1) email filtering (2) sentimental analysis
(3) face recognitio (4) All the above

6. _____ is the machine learning algorithms that can be used with labeled data.
(1) Regression algorithms
(2) Clustering algorithms
(3) Association algorithms
(4) All of the above

1. Algorithms can not be represented:
(1) as pseudo codes (2) as syntax
(3) as programs (4) as flowcharts

2. A system wherein items are added from one end and removed from the other end.
(1) Stack (2) Queue
(3) Linked List (4) Array

3. A _____ is a directed graph that describes the flow of execution control of the program.
(1) Flowchart (2) Flow graph
(3) Complexity curve (4) Algorithm

4. A program should be _____.
(1) Secure (2) Sequential
(3) Ordered (4) Simple

5. Semicolon is used after :
(1) Function definition
(2) Function call
(3) for loop
(4) while loop

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6. Which of the following is not an example of non comparison sort?
(1) bubble sort (2) counting sort
(3) radix sort (4) bucket sort
7. Problem solving begins with the precise identification of the problem and ends with a complete working solution in terms of a:-
(1) Program (2) software
(3) Both (1) & (2) (4) None of the above
8. In programming languages, 'otherwise' is represented using
(1) Else keyword (2) Process keyword
(3) Def. keyword (4) None of the above
9. The method of taking an input and running through the steps of the algorithm is sometimes called
(1) wet run (2) dry run
(3) no run (4) sprrd run
10. A program written in a high-level language is called
(1) poartable code (2) source code
(3) high code (4) low code

ANSWERS

1. (2)	2. (2)	3. (1)	4. (2)	5. (2)
6. (1)	7. (3)	8. (1)	9. (2)	10. (2)

5. Getting Started with Python

1. Is Python case sensitive when dealing with identifiers?
(1) yes
(2) no
(3) machine dependent
(4) none of the mentioned
2. What is the maximum possible length of an identifier?
(1) 31 characters (2) 63 characters
(3) 79 characters (4) none of the mentioned
3. Language translators like compilers and interpreters are needed to translate the source code into
(1) machine language (2) code word
(3) english language (4) All the above
4. Which of the following statement is/are correct?
(I) Python is a high level language. It is a free and open source language.
(II) It is an interpreted language, as Python programs are executed by an interpreter.

- (III) Python programs are easy to understand as they have a clearly defined syntax and relatively simple structure.
(1) II only (2) I & II
(3) II & III (4) I, II & III
5. The symbol >>> is the Python prompt, which indicates that the
(1) interpreter is ready to take instructions.
(2) interpreter is ready to give command.
(3) we can type commands.
(4) statements on this prompt to execute them using a Python interpreter.
6. There are ____ ways to use the Python interpreter.
(1) 1 (2) 2
(3) 3 (4) 4
7. The process of identifying and removing errors from a computer program is called;
(1) debugging (2) error
(3) float (4) syntax
8. Trying to use a variable that has not been assigned a value gives:-
(1) positive value. (2) negative value.
(3) an error. (4) any integer
9. Datatype conversion can happen:-
(1) implicitly
(2) explicitly
(3) either explicitly or implicitly.
(4) None of the above.
10. Runtime error is when the statement is
(1) correct syntactically, but the interpreter cannot execute it.
(2) correct interpreter, but the syntactically cannot execute it.
(3) correct syntactically, and the interpreter can execute it.
(4) false correct syntactically, and the interpreter can execute it.

ANSWERS

1. (1)	2. (4)	3. (1)	4. (4)	5. (1)
6. (2)	7. (1)	8. (3)	9. (3)	10. (1)

6. Flow of Control

1. Which keyword can be used for coming out of recursion?
(1) break (2) return
(3) exit (4) both break and return

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2. Which keyword is used to come out of a loop only for that iteration?
- break
 - continue
 - return
 - none of the mentioned
3. The order of execution of the statements in a program is known as
- Selection
 - Indentation
 - flow of control
 - Repetition
4. A decision involves selecting from one of the two or more possible options. In programming, this concept of decision making or selection is implemented with the help of _____ statement.
- if..else
 - if..but
 - if..no
 - if..def.
5. The syntax for if..else statement is as follows.
- if condition:
 statement(s)
else:
 statement(s)
 - else:
 statement(s)
 - if condition:
 statement(s)
 - All the above
6. Leading white space (spaces and tabs) at the beginning of a statement is called
- Repetition
 - indentation
 - Selection
 - syntax
7. Repetition of a set of statements in a program is made possible using
- looping constructs.
 - Selection
 - flow of control
 - syntax
8. The for statement is used to:-
- iterate over a range of values or a sequence.
 - execute for each of the items in the range.
 - depicting the execution of a for loop.
 - None of the above
9. The range() is a built-in function in Python. Syntax of range() function is:
- range(start), stop, step
 - range[start], stop, [step]]
 - range start, stop, step
 - range([start], stop[, step])

10. When a _____ statement is encountered, the control skips the execution of remaining statements inside the body of the loop for the current iteration and jumps to the beginning of the loop for the next iteration.
- continue
 - stop
 - true
 - false

ANSWERS

1. (2)	2. (2)	3. (3)	4. (1)	5. (1)
6. (2)	7. (1)	8. (1)	9. (1)	10. (1)

7. Functions

1. Function cannot be used for _____ statement.
- Create
 - Drop
 - Select
 - Insert
2. User defined function in SQL Server can return
- Scalar value
 - Set of values
 - Result set
 - All of the mentioned
3. Syntax for creation of user defined function is
- CREATE FUNCTIONS
 - CREATE FUNCTION
 - CREATE FUNC
 - All of the mentioned
4. Which of the following does not return a table variable?
- System-defined function
 - Scalar Function
 - Inline Table-Valued Function
 - Multi-Statement Table-Valued Function
5. What is the scope of an external variable?
- Whole source file in which it is defined
 - From the point of declaration to the end of the file in which it is defined
 - Any source file in a program
 - From the point of declaration to the end of the file being compiled
6. Array sizes are optional during array declaration by using _____ keyword.
- auto
 - static
 - extern
 - register
7. Who developed Python Programming Language?
- Wick van Rossum
 - Rasmus Lerdorf
 - Guido van Rossum
 - Niene Stom

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2. Which keyword is used to come out of a loop only for that iteration?
(1) break
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(4) none of the mentioned
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(3) if..no (4) if..def.
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 statement(s)
else:
 statement(s)
(2) else:
 statement(s)
(3) if condition:
 statement(s)
(4) All the above
6. Leading white space (spaces and tabs) at the beginning of a statement is called
(1) Repetition (2) indentation
(3) Selection (4) syntax
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(1) range(start), stop, step
(2) range[start], stop, [step]]
(3) range start, stop, step
(4) range([start], stop[, step])

10. When a _____ statement is encountered, the control skips the execution of remaining statements inside the body of the loop for the current iteration and jumps to the beginning of the loop for the next iteration.
(1) continue (2) stop
(3) true (4) false

ANSWERS

1. (2)	2. (2)	3. (3)	4. (1)	5. (1)
6. (2)	7. (1)	8. (1)	9. (1)	10. (1)

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(3) extern (4) register
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(3) Guido van Rossum
(4) Niene Stom

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8. Program code making use of a given module is called a _____ of the module.

(1) Client (2) Docstring
(3) Interface (4) Modularity

9. Flow of execution can be defined as the order in which

(1) the statements in a program are executed.
(2) scope of the variable are executed.
(3) extensive collection of functions and modules are executed.
(4) statement are returned through a Tuple.

10. _____ is also called Python documentation strings. It is a multiline comment that is added to describe the modules, functions, etc.

(1) Double quotes (2) Docstrings
(3) Module (4) Required function(s)

ANSWERS

1. (4)	2. (4)	3. (2)	4. (2)	5. (4)
6. (3)	7. (3)	8. (1)	9. (1)	10. (2)

8. Strings

1. Which of the following function sets first n characters of a string to a given character?
(1) strinit() (2) strnset()
(3) strset() (4) strcset()
 2. If the two strings are identical, then strcmp0 function returns
(1) -1 (2) 1
(3) 0 (4) Yes
 3. The library function used to find the last occurrence of a character in a string is
(1) strnstr() (2) laststr()
(3) strrchr() (4) strstr()
 4. Which of the following function is used to find the first occurrence of a given string in another string?
(1) strchr0 (2) strrchr0
(3) strstr0 (4) strnset0
 5. String is a sequence which is made up of one or more
(1) UNICODE characters.
(2) whitespace
(3) letter
(4) digit

- ANSWERS

1. (2)	2. (3)	3. (3)	4. (3)	5. (1)
6. (1)	7. (1)	8. (1)	9. (1)	10. (4)

9. Lists

- 1.** Which of the following would give an error?

(1) list1=[] (2) list1=[]*3
(3) list1=[2,8,7] (4) None of the above

2. Which of the following is True regarding lists in Python?

(1) Lists are immutable.
(2) Size of the lists must be specified before its initialization
(3) Elements of lists are stored in contagious memory location.
(4) size(list1) command is used to find the size of lists.

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

```
list1=[8,0,9,5]
print(list1[::-1])
```

(1) [5,9,0,8] (2) [8,0,9]
(3) [8,0,9,5] (4) [0,9,5]

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- 4.** Which of the following commands will create a list?
- list1 = list0
 - list1 = []
 - list1 = list([1, 2, 3])
 - all of the mentioned
- 5.** Suppose listExample is ['h', '-e', 'T', 'l', 'o']. what is len(listExample)?
- 5
 - 4
 - None
 - Error
- 6.** To shuffle the list(say list1) what function do we use?
- list1.shuffle()
 - shuffle(list1)
 - random.shuffle(list1)
 - random.shuffleList(list1)
- 7.** Suppose list1 is [2, 33, 222, 14, 25]. What is list1[:-1]?
- [2, 33, 222, 14]
 - Error
 - 25
 - [25, 14, 222, 33, 2]
- 8.** Suppose list1 = [0.5 * x for x in range(0, 4)], list1 is:
- [0, 1, 2, 3]
 - [0, 1, 2, 3, 4]
 - [0.0, 0.5, 1.0, 1.5]
 - [0.0, 0.5, 1.0, 1.5, 2.0]
- 9.** To remove string "hello" from list1, we use which command?
- list1.remove("hello")
 - list1.remove(hello)
 - list1.removeAll("hello")
 - list1.removeOne("hello")
- 10.** To which of the following the "in" operator can be used to check if an item is in it?
- Lists
 - Dictionary
 - Set
 - All of the mentioned

ANSWERS

1. (4)	2. (3)	3. (1)	4. (4)	5. (1)
6. (3)	7. (1)	8. (3)	9. (1)	10. (4)

10. Tuples and Dictionaries

- 1.** Which of the following is a Python tuple?
- [1, 2, 3]
 - (1, 2, 3)
 - {1, 2, 3}
 - {}

- 2.** Suppose t = (1, 2, 4, 3), which of the following is incorrect?
- print(t[3])
 - t[3] = 45
 - print(max(t))
 - print(len(t))
- 3.** If a=(1,2,3,4), a[1:-1] is _____
- Error, tuple slicing doesn't exist
 - [2,3]
 - (2,3,4)
 - (2,3)
- 4.** Is the following Python code valid?
- ```
>>> a=(1,2,3,4)
>>>del a
```
- No because tuple is immutable
  - Yes, first element in the tuple is deleted
  - Yes, the entire tuple is deleted
  - No, invalid syntax for del method
- 5.** What type of data is: a=[(1,1),(2,4),(3,9)]?
- Array of tuples
  - List of tuples
  - Tuples of lists
  - Invalid type
- 6.** What will be the output of the following Python code?
- ```
>>> a=[(2,4),(1,2),(3,9)]
>>> a.sort()
>>> a
```
- [(1, 2), (2, 4), (3, 9)]
 - [(2,4),(1,2),(3,9)]
 - Error because tuples are immutable
 - Error, tuple has no sort attribute
- 7.** Suppose d = {"john":40, "peter":45}. To obtain the number of entries in dictionary which command do we use?
- d.size()
 - len((4))
 - size((4))
 - d.len()
- 8.** Suppose d = {"john":40, "peter":45}, what happens when we try to retrieve a value using the expression d["susan"]?
- Since "susan" is not a value in the set, Python raises a KeyError exception
 - It is executed fine and no exception is raised, and it returns None
 - Since "susan" is not a key in the set, Python raises a KeyError exception
 - Since "susan" is not a key in the set, Python raises a syntax error

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- 9.** Which of these about a dictionary is false?
- The values of a dictionary can be accessed using keys
 - The keys of a dictionary can be accessed using values
 - Dictionaries aren't ordered
 - Dictionaries are mutable
- 10.** If `a` is a dictionary with some key-value pairs, what does `a.popitem()` do?
- Removes an arbitrary element
 - Removes all the key-value pairs
 - Removes the key-value pair for the key given as an argument
 - Invalid method for dictionary

ANSWERS

1. (2)	2. (2)	3. (4)	4. (3)	5. (2)
6. (1)	7. (2)	8. (3)	9. (2)	10. (1)

11. Societal Impact

- Whenever we surf the Internet using smartphones, tablets, computers, etc., we leave a trail of data reflecting the activities performed by us online, which is our
 - digital technologies
 - human activities
 - digital footprint
 - None of the above
- Digital footprints are stored _____
 - Temporarily (for few days)
 - Permanently
 - for 7 days only
 - for 3 days.
- _____ are the records and traces that we left behind as we use Internet.
 - Digital Footprints
 - Data Protection
 - Plagiarism
 - Digital Data
- There are _____ kinds of Digital footprints.
 - 1
 - 2
 - 3
 - 4
- The digital data trail we leave online unintentionally is called _____

- Active digital footprints
 - Passive digital footprints
 - Current digital footprints
 - None of the above
- 6.** Which of the following is not a cyber crime?
- Phishing
 - Ransomware
 - Hacking
 - Tracking
- 7.** Which of the following can be considered as safety measures to reduce the risk of cyber crime?
- Use an antivirus software and keep it updated always.
 - Avoid installing pirated software.
 - Use strong password for web login, and change it periodically.
 - All of the above
- 8.** The _____ include right to copy (reproduce) a work, right to distribute copies of the work to the public, and right to publicly display or perform the work.
- Copyright
 - Patent
 - Createright
 - None of the above
- 9.** Example of sensitive data is _____
- Name of a person
 - Credit card detail of a person
 - Date of birth of a person
 - None of the above
- 10.** IPR stands for _____
- Indian Property Right
 - Intellectual Property Right
 - Intelligent Property Right
 - Intellectual Property Resource

ANSWERS

1. (3)	2. (2)	3. (1)	4. (2)	5. (2)
6. (4)	7. (4)	8. (1)	9. (2)	10. (2)

ध्यान दें:

बिहार शिक्षक (BPSC TRE) परीक्षा कक्षा 1 से 5, कक्षा 9 से 10 एवं कक्षा 11 से 12 का पाठ्यक्रम NCERT एवं SCERT पर आधारित है एवं इन्हीं पुस्तकों से ही प्रश्न पूछे जाएँगे।

किरण पब्लिकेशन्स की सभी पुस्तकें NCERT एवं SCERT पाठ्यक्रम पर पूर्णतः आधारित हैं।

शायद कोई और पुस्तक नहीं।

NCERT के कक्षा 12 के पाठ्यक्रम पर आधारित Chapterwise MCQs

12. Handling in Python

- 1.** How many except statements can a try-except block have?
(1) zero (2) one
(3) more than one (4) more than zero

2. Can one block of except statements handle multiple exception?
(1) yes, like except TypeError, SyntaxError [...]
(2) yes, like except [TypeError, SyntaxError]
(3) no
(4) none of the mentioned

3. When is the finally block executed?
(1) when there is no exception
(2) when there is an exception
(3) only if some condition that has been specified is satisfied
(4) always

4. What happens when 'l == 1' is executed?
(1) we get a True
(2) we get a False
(3) an TypeError occurs
(4) a ValueError occurs

5. What will be the output of the following Python code?
`#generator
def f(x):
 yield x+1
g=f(8)
print(next(g))`
(1) 8 (2) 9
(3) 7 (4) Error

6. Which of the following is not an exception handling keyword in Python?
(1) try (2) except
(3) accept (4) finally

7. What will be the output of the following Python code?
`t[5]`
(1) IndexError (2) NameError
(3) TypeError (4) ValueError

8. Which of the following statements is true?
(1) The standard exceptions are automatically imported into Python programs
(2) All raised standard exceptions must be handled in Python

ANSWERS

1. (2)	2. (1)	3. (4)	4. (2)	5. (2)
6. (3)	7. (2)	8. (1)	9. (1)	10. (1)

13. File Handling in Python

1. Which of the following statements are true?
 - (1) When you open a file for reading, if the file does not exist, an error occurs
 - (2) When you open a file for writing, if the file does not exist, a new file is created
 - (3) When you open a file for writing, if the file exists, the existing file is overwritten with the new file
 - (4) All of the mentioned
 2. What is the use of tell() method in python?
 - (1) tells you the current position within the file
 - (2) tells you the end position within the file
 - (3) tells you the file is opened or not
 - (4) none of the mentioned
 3. What is the current syntax of rename() a file?
 - (1) rename(current_file_name, new_file_name)
 - (2) rename(new_file_name, current_file_name.)
 - (3) rename()(current_file_name, new_file_name))
 - (4) none of the mentioned
 4. What is the current syntax of remove() a file?
 - (1) remove(file_name)
 - (2) remove(new_file_name, current_file_name.)
 - (3) remove((), file_name))
 - (4) none of the mentioned

CHAPTERWISE MCQs

ANSWERS

1. (4)	2. (1)	3. (1)	4. (1)	5. (4)
6. (3)	7. (1)	8. (2)	9. (1)	10. (1)

14. STACK

- ANSWERS -

1. (2)	2. (4)	3. (1)	4. (1)	5. (4)
6. (4)	7. (4)	8. (3)	9. (1)	10. (2)

15. QUEUE

CHAPTERWISE MCQs

2. The data structure required for Breadth First Traversal on a graph is?
- (1) Stack (2) Array
(3) Queue (4) Tree
3. A queue follows _____
- (1) FIFO (First In First Out) principle
(2) LIFO (Last In First Out) principle
(3) Ordered array
(4) Linear tree
4. A data structure in which elements can be inserted or deleted at/from both ends but not in the middle is?
- (1) Queue (2) Circular queue
(3) Dequeue (4) Priority queue
5. Queues serve major role in _____
- (1) Simulation of recursion
(2) Simulation of arbitrary linked list
(3) Simulation of limited resource allocation
(4) Simulation of heap sort
6. Which of the following is not the type of queue?
- (1) Ordinary queue (2) Single ended queue
(3) Circular queue (4) Priority queue
7. A normal queue, if implemented using an array of size MAX_SIZE, gets full when?
- (1) Rear = MAX_SIZE - 1
(2) Front = (rear + 1)mod MAX_SIZE
(3) Front = rear + 1
(4) Rear = front
8. If the elements "A", "B", "C" and "D" are placed in a queue and are deleted one at a time, in what order will they be removed?
- (1) ABCD (2) DCBA
(3) DCAB (4) ABDC
9. Circular Queue is also known as _____
- (1) Ring Buffer (2) Square Buffer
(3) Rectangle Buffer (4) Curve Buffer
10. Which one of the following is an application of Queue Data Structure?
- (1) When a resource is shared among multiple consumers.
(2) When data is transferred asynchronously (data not necessarily received at same rate as sent) between two processes
(3) Load Balancing
(4) All the above

ANSWERS

1. (1)	2. (3)	3. (1)	4. (3)	5. (3)
6. (2)	7. (1)	8. (1)	9. (1)	10. (2)

16. Sorting

1. How many passes does an insertion sort algorithm consist of?
- (1) N (2) N-1
(3) N+1 (4) N²
2. Which of the following algorithm implementations is similar to that of an insertion sort?
- (1) Binary heap (2) Quick sort
(3) Merge sort (4) Radix sort
3. What will be the number of passes to sort the elements using insertion sort?
- 14, 12, 16, 6, 3, 10
- (1) 6 (2) 5
(3) 7 (4) 1
4. Which of the following is good for sorting arrays having less than 100 elements?
- (1) Quick Sort (2) Selection Sort
(3) Merge Sort (4) Insertion Sort
5. **Statement 1:** In insertion sort, after m passes through the array, the first m elements are in sorted order.
- Statement 2:** And these elements are the m smallest elements in the array.
- (1) Both the statements are true
(2) Statement 1 is true but statement 2 is false
(3) Statement 1 is false but statement 2 is true
(4) Both the statements are false
6. In the following scenarios, when will you use selection sort?
- (1) The input is already sorted
(2) A large file has to be sorted
(3) Large values need to be sorted with small keys
(4) Small values need to be sorted with large keys
7. What is the advantage of selection sort over other sorting techniques?
- (1) It requires no additional storage space
(2) It is scalable
(3) It works best for inputs which are already sorted
(4) It is faster than any other sorting technique

CHAPTERWISE MCQs

- 8.** What is the disadvantage of selection sort?
- It requires auxiliary memory
 - It is not scalable
 - It can be used for small keys
 - It takes linear time to sort the elements
- 9.** What is an internal sorting algorithm?
- Algorithm that uses tape or disk during the sort
 - Algorithm that uses main memory during the sort
 - Algorithm that involves swapping
 - Algorithm that are considered 'in place'
- 10.** Which of the following is not an advantage of optimised bubble sort over other sorting techniques in case of sorted elements?
- It is faster
 - Consumes less memory
 - Detects whether the input is already sorted
 - Consumes less time

ANSWERS

1. (2)	2. (1)	3. (2)	4. (4)	5. (2)
6. (3)	7. (1)	8. (2)	9. (2)	10. (3)

17. Searching

- 1.** Where is linear searching used?
- When the list has only a few elements
 - When performing a single search in an unordered list
 - Used all the time
 - When the list has only a few elements and When performing a single search in an unordered list
- 2.** What is the best case for linear search?
- $O(n \log n)$
 - $O(\log n)$
 - $O(n)$
 - $O(1)$
- 3.** What is the worst case for linear search?
- $O(n \log n)$
 - $O(\log n)$
 - $O(n)$
 - $O(1)$
- 4.** Is there any difference in the speed of execution between linear search(recursive) vs linear search(iterative)?
- Both execute at same speed
 - Linear search(recursive) is faster
 - Linear search(Iterative) is faster
 - Can't be said

- 5.** Is the space consumed by the linear search(recursive) and linear search(iterative) same?
- No, recursive algorithm consumes more space
 - No, recursive algorithm consumes less space
 - Yes
 - Nothing can be said
- 6.** Can linear search recursive algorithm and binary search recursive algorithm be performed on an unordered list?
- Binary search can't be used
 - Linear search can't be used
 - Both cannot be used
 - Both can be used
- 7.** If the number of records to be sorted is small, then _____ sorting can be efficient.
- Merge
 - Heap
 - Selection
 - Bubble
- 8.** Which of the following is not the required condition for a binary search algorithm?
- The list must be sorted
 - There should be direct access to the middle element in any sublist
 - There must be a mechanism to delete and/or insert elements in the list.
 - Number values should only be present
- 9.** The complexity of the sorting algorithm measures the _____ as a function of the number n of items to be sorted.
- average time
 - running time
 - average-case complexity
 - case-complexity

- 10.** The Average case occurs in the linear search algorithm _____
- when the item is somewhere in the middle of the array
 - when the item is not the array at all
 - when the item is the last element in the array
 - Item is the last element in the array or item is not there at all.

ANSWERS

1. (4)	2. (4)	3. (3)	4. (3)	5. (1)
6. (1)	7. (3)	8. (3)	9. (2)	10. (1)

CHAPTERWISE MCQs

18. Understanding Data

- (2) Measures of Variability
(3) Measures of Central Tendency
(4) None of the above

10. Which of the following statement is correct in the context of “importance of data”?

S1: Data allows organizations to more effectively determine the cause of problems.

S2: Data allows organizations to visualize relationships between what is happening in different locations, departments, and systems.

(1) Only S1 is correct.
(2) Only S2 is correct.
(3) Both S1 and S2 are correct.
(4) Neither S1 nor S2 are correct.

- ANSWERS

1. (3)	2. (4)	3. (1)	4. (4)	5. (2)
6. (4)	7. (4)	8. (4)	9. (1)	10. (3)

19. Database Concept

CHAPTERWISE MCQs

- 5.** In which of the following formats data is stored in the database management system?
- Image
 - Text
 - Table
 - Graph
- 6.** Which of the following is not a type of database?
- Hierarchical
 - Network
 - Distributed
 - Decentralized
- 7.** Which of the following is not an example of DBMS?
- MySQL
 - Microsoft Access
 - IBM DB2
 - Google
- 8.** Which of the following is a feature of DBMS?
- Minimum Duplication and Redundancy of Data
 - High Level of Security
 - Single-user Access only
 - Support ACID Property
- 9.** Which of the following is a feature of the database?
- No-backup for the data stored
 - User interface provided
 - Lack of Authentication
 - Store data in multiple locations
- 10.** _____ is a set of one or more attributes taken collectively to uniquely identify a record.
- Primary Key
 - Foreign key
 - Super key
 - Candidate key

ANSWERS

1. (2)	2. (3)	3. (4)	4. (4)	5. (3)
6. (4)	7. (4)	8. (3)	9. (2)	10. (3)

20. Data Handling Using Pandas

- 1.** Point out the correct statement.
- If data is a list, and if index is passed then the values in data corresponding to the labels in the index will be pulled out
 - Nan is the standard missing data marker used in pandas
 - Series acts very similarly to a array
 - None of the mentioned
- 2.** Which of the following thing can be data in Pandas?
- a python dict
 - an ndarray
 - a scalar value
 - all of the mentioned

- 3.** The result of an operation between unaligned Series will have the _____ of the indexes involved.
- intersection
 - union
 - total
 - all of the mentioned
- 4.** Which of the following input can be accepted by DataFrame?
- Structured ndarray
 - Series
 - DataFrame
 - All of the mentioned
- 5.** Which of the following takes a dict of dicts or a dict of array-like sequences and returns a DataFrame?
- DataFrame.from_items
 - DataFrame.from_records
 - DataFrame.from_dict
 - All of the mentioned
- 6.** Which of the following statement is wrong ?
- A DataFrame is like a fixed-size dict in that you can get and set values by index label
 - Series can be passed into most NumPy methods expecting an ndarray
 - A key difference between Series and ndarray is that operations between Series automatically align the data based on label
 - None of the mentioned
- 7.** Which of the following works analogously to the form of the dict constructor?
- DataFrame.from_items
 - DataFrame.from_records
 - DataFrame.from_dict
 - All of the mentioned
- 8.** All pandas data structures are _____ mutable but not always _____ mutable.
- size, value
 - semantic, size
 - value, size
 - none of the mentioned
- 9.** Which of the following library is similar to Pandas?
- NumPy
 - RPy
 - OutPy
 - None of the mentioned
- 10.** Which of the following makes use of pandas and returns data in a series or DataFrame?
- pandaSDMX
 - freedapi
 - OutPy
 - none of the mentioned

ANSWERS

1. (2)	2. (4)	3. (2)	4. (4)	5. (1)
6. (1)	7. (1)	8. (3)	9. (1)	10. (2)

CHAPTERWISE MCQs

21. Structured Query Language (SQL)

- What is the full form of SQL?
 - Structured Query Language
 - Structured Query List
 - Simple Query Language
 - None of the Mentioned
 - In SQL, which command is used to SELECT only one copy of each set of duplicable rows
 - SELECT DISTINCT
 - SELECT UNIQUE
 - SELECT DIFFERENT
 - All of the Mentioned
 - A command that lets you change one or more fields in a record is
 - Insert
 - Modify
 - Look-up
 - All of the Mentioned
 - Which of the SQL statements is correct?
 - SELECT Username AND Password FROM Users
 - SELECT Username, Password FROM Users
 - SELECT Username, Password WHERE Username = 'user1'
 - None of the Mentioned
 - The SQL statement SELECT SUBSTR ('123456789', INSTR ('abcabcabc', 'b'), 4) FROM DUAL;
 - 6789
 - 2345
 - 1234
 - 456789
 - Table Employee has 10 records. It has a non-NUL SALARY column which is also UNIQUE. The SQL statement
SELECT COUNT(*) FROM Employee WHERE SALARY > ANY (SELECT SALARY FROM EMPLOYEE);
 - 10
 - 9
 - 5
 - 0
 - Find the temperature in increasing order of all cities
 - SELECT city FROM weather ORDER BY temperature;
 - SELECT city, temperature FROM weather;
 - SELECT city, temperature FROM weather ORDER BY temperature;
 - SELECT city, temperature FROM weather ORDER BY city;
 - In SQL, which command(s) is(are) used to change a table's storage characteristics?

- ANSWERS

1. (1)	2. (1)	3. (2)	4. (2)	5. (2)
6. (2)	7. (3)	8. (1)	9. (3)	10. (2)

22. Computer Network

- (3) Look-up (4) All of the Mentioned

4. Which of the SQL statements is correct?

(1) SELECT Username AND Password FROM Users
(2) SELECT Username, Password FROM Users
(3) SELECT Username, Password WHERE Username = 'user1'
(4) None of the Mentioned

5. The SQL statement SELECT SUBSTR ('123456789', INSTR ('abcabcabc', 'b'), 4) FROM DUAL;
(1) 6789 (2) 2345
(3) 1234 (4) 456789

6. Table Employee has 10 records. It has a non-NULL SALARY column which is also UNIQUE. The SQL statement
SELECT COUNT(*) FROM Employee WHERE SALARY > ANY (SELECT SALARY FROM EMPLOYEE);
(1) 10 (2) 9
(3) 5 (4) 0

7. Find the temperature in increasing order of all cities
(1) SELECT city FROM weather ORDER BY temperature;
(2) SELECT city, temperature FROM weather;
(3) SELECT city, temperature FROM weather ORDER BY temperature;
(4) SELECT city, temperature FROM weather ORDER BY city;

8. In SQL, which command(s) is(are) used to change a table's storage characteristics?

1. Physical or logical arrangement of network is _____

(1) Topology (2) Routing
(3) Networking (4) Control

2. _____ topology requires a multipoint connection.
(1) Star (2) Mesh
(3) Ring (4) Bus

3. WAN stands for _____
(1) World area network
(2) Wide area network
(3) Web area network
(4) Web access network

4. _____ is the multiplexing technique that shifts each signal to a different carrier frequency.
(1) FDM
(2) TDM
(3) Both FDM & TDM
(4) PDM

5. Multiplexing is used in _____
(1) Packet switching
(2) Circuit switching
(3) Data switching
(4) Packet & Circuit switching

6. In the layer hierarchy as the data packet moves from the upper to the lower layers, headers are _____

(1) Added (2) Removed
(3) Rearranged (4) Modified

CHAPTERWISE MCQs

7. The structure or format of data is called _____

(1) Syntax (2) Semantics
(3) Struct (4) Formatting

8. When collection of various computers seems a single coherent system to its client, then it is called _____

(1) computer network (2) distributed system
(3) networking system (4) mail system

9. Two devices are in network if _____

(1) a process in one device is able to exchange information with a process in another device
(2) a process is running on both devices
(3) PIDs of the processes running of different devices are same
(4) a process is active and another is inactive

10. In computer network nodes are _____

(1) the computer that originates the data
(3) the computer that routes the data
(3) the computer that terminates the data
(4) all of the mentioned

(1) local area network
(2) personal area network
(3) metropolitan area network
(4) wide area network

5. Bluetooth uses _____

(1) frequency hopping spread spectrum
(2) orthogonal frequency division multiplexing
(3) time division multiplexing
(4) channel division multiplexing

6. Bluetooth transceiver devices operate in _____ band.

(1) 2.4 GHz ISM (2) 2.5 GHz ISM
(3) 2.6 GHz ISM (4) 2.7 GHz ISM

7. Bluetooth supports _____

(1) point-to-point connections
(2) point-to-multipoint connection
(3) both point-to-point connections and point-to-multipoint connection
(4) multipoint to point connection

8. What is the access point (AP) in a wireless LAN?

ANSWERS

1. (1)	2. (4)	3. (2)	4. (1)	5. (2)
6. (1)	7. (1)	8. (2)	9. (1)	10. (4)

23. Data Communication

- (1) local area network
 - (2) personal area network
 - (3) metropolitan area network
 - (4) wide area network

5. Bluetooth uses _____

 - (1) frequency hopping spread spectrum
 - (2) orthogonal frequency division multiplexing
 - (3) time division multiplexing
 - (4) channel division multiplexing

6. Bluetooth transceiver devices operate in _____ band.

 - (1) 2.4 GHz ISM
 - (2) 2.5 GHz ISM
 - (3) 2.6 GHz ISM
 - (4) 2.7 GHz ISM

7. Bluetooth supports _____

 - (1) point-to-point connections
 - (2) point-to-multipoint connection
 - (3) both point-to-point connections and point-to-multipoint connection
 - (4) multipoint to point connection

8. What is the access point (AP) in a wireless LAN?

 - (1) device that allows wireless devices to connect to a wired network
 - (2) wireless devices itself
 - (3) both device that allows wireless devices to connect to a wired network and wireless devices itself
 - (4) all the nodes in the network

9. In wireless distribution system _____

 - (1) multiple access point are inter-connected with each other
 - (2) there is no access point
 - (3) only one access point exists
 - (4) access points are not required

10. What is a web browser?

 - (1) a program that can display a web page
 - (2) a program used to view html documents
 - (3) it enables user to access the resources of internet
 - (4) all of the mentioned

- ANSWERS

1. (4)	2. (3)	3. (1)	4. (2)	5. (1)
6. (1)	7. (3)	8. (1)	9. (1)	10. (4)

CHAPTERWISE MCQs

24. Security Aspects

1. Which of the following act violates cyber security?

 - (1) Exploit
 - (2) Attack
 - (3) Threat
 - (4) Vulnerability

2. _____ is the kind of firewall is connected between the device and the network connecting to internet.

 - (1) Hardware Firewall
 - (2) Software Firewall
 - (3) Stateful Inspection Firewall
 - (4) Microsoft Firewall

3. Firewall examines each _____ that are entering or leaving the internal network.

 - (1) emails users
 - (2) updates
 - (3) connections
 - (4) data packets

4. _____ persistence and up-to-date with the latest technological updates and their flaws are some of the major qualities; an ethical hacker must need to have.

 - (1) Lack of understanding
 - (2) Weak programming skills
 - (3) High patience
 - (4) Low perseverance

5. Understanding of _____ is also important for gaining access to a system through networks.

 - (1) os
 - (2) email-servers
 - (3) networking
 - (4) hardware

6. The _____ is a security app by Microsoft which is a built-in one into Windows OS that is designed to filter network data from your Windows system & block harmful communications or the programs which are initiating them.

 - (1) Windows Security Essentials
 - (2) Windows Firewall
 - (3) Windows app blocker
 - (4) Windows 10

7. Which of the following is not a type of virus?

 - (1) Boot sector
 - (2) Polymorphic
 - (3) Multipartite
 - (4) Trojans

8. Which of the below-mentioned reasons do not satisfy the reason why people create a computer virus?

 - (1) Research purpose
 - (2) Pranks
 - (3) Identity theft
 - (4) Protection

- ANSWERS -

1. (2)	2. (1)	3. (4)	4. (3)	5. (3)
6. (2)	7. (4)	8. (4)	9. (1)	10. (3)

25. Project Based Learning

1. Which of the following steps are involved in project based learning
 - (i) defining a plan
 - (ii) outcome of project
 - (iii) Identification of a project
 - (1) Only (i)
 - (2) Only (ii)
 - (3) (ii) and (iii)
 - (4) (i), (ii) and (iii)
 2. A structured or a modular approach to a project means :
 - (1) A project is time bound
 - (2) A project is divided into various manageable modules
 - (3) Both (1) and (2)
 - (4) None of the above

ANSWERS

1. (4)	2. (2)			
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