ARMYPUBLIC SCHOOL DHAULA KUAN
SUBJECT: COMPUTER SCIENCE
TIME: 1 .5 HRS CLASS-12 MCQs

Q1 What is the default return value of a Python function without return statement? A) 0 B) None C) "" D) True	Q2 Which scope is accessible only within a function? A) Global B) Local C) Enclosing D) Built-in
Q3 raise keyword usage? A) Catch exception B) Throw exception C) Ignore D) Log	Q4 'a+' file mode? A) Read only B) Write only C) Read+append D) Read+write
Q5 Error reading non-existent file? A) EOFError B) FileNotFoundError C) IOError D) ValueError	Q6 Which keyword creates function with default parameters? A) def B) = C) default D) init
Q7 Mode to read text file? A) 'w' B) 'r' C) 'a' D) 'b'	Q8 Binary file writing module? A) csv B) pickle C) open() D) json
Q9 Scope of variable in nested function (inner)? A) Global only B) Enclosing + Local C) Local only D) All scopes	Q10 CSV reading function? A) csv.reader(file) B) file.csv() C) read.csv() D) csv.open()
Q11 Close file automatically? A) file.close() B) with open(): C) try-finally D) All correct	Q12 'wb' mode purpose? A) Write text B) Write binary C) Read binary D) Append binary

Q13 What does *args represent in function parameters?
A) Keyword args B) Variable positional args
C) Fixed args D) Default args
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Q15 A Pickle dump() writes to?
A) Text file B) Binary file C) CSV D) pickle
	Q14 Output if no exception:
	try:
	x=1
	except:
	pass
	else:
	print("Good")
	A) Error B) Good C) Nothing D) Pass

Q16 Which block executes regardless of exception? A) try B) except C) else D) finally	Q17 seek(0) in file does what? A) End position B) Start position C) Current D) Delete

Q18 Multiple exceptions in one except?
A) except (ValueError, TypeError):
B) except ValueError or TypeError:
C) Both invalid
D) Separate only
	Q19 Output:
	def outer():
	x=10;
	def inner():
	print(x);

	inner() (a) Error (b) 10 (c) 0 (d) None
Q20 What triggers ZeroDivisionError? A) 5/0 B) int("abc") C) 1+"a" D) list[10]	Q21 Correct syntax for specific exception? A) except: B) except ValueError: C) except error D) try error
Q22 Purpose of else clause in try-except? A) Handles exception B) No exception case C) Cleanup D) Raise error	Q23 Which function call uses keyword arguments? A) func(1,2) B) func(a=1,b=2) C) func(*args) D) func(1)
Q24 Stack push operation (list)? A) stack.pop() B) stack.append(item) C) stack.insert(0,item) D) Both B&C	Q25 Stack pop removes? A) First element B) Last element C) Random D) Middle
Q26 random.randint(1,10) returns? A) Float B) Int C) List D) String	Q27 Import specific function: A) import random B) from random import randint C) import randint D) from import random
Q28 Stack empty check? A) len(stack)==0 B) stack.isempty() C) not stack D) A and C	Q29 LAN covers distance up to? A) 1km B) 10km C) 100km D) Global
Q30 Which connects multiple LANs? A) Switch B) Router C) Hub D) Repeater	Q31 MAN stands for? A) Main Area Network B) Metropolitan C) Mobile D) Multi
Q32 Client-Server model example? A) P2P B) Web browser-server C) LAN D) All	Q33 Which network has highest speed? A) LAN B) WAN C) MAN D) PAN
Q34 Internet is type of? A) LAN B) WAN C) MAN D) PAN	Q35 Star topology advantage? A) Easy fault detection B) Cheap cable C) No central device D) Ring failure
Q36 Bus topology terminator purpose? A) Connect devices B) Prevent signal reflection C) Amplify D) Route	Q37 Switch operates at? A) Physical B) Data Link C) Network D) Transport
Q38 Repeater function? A) Connect networks B) Regenerate signal C) Filter traffic D) Route packets	Q39 topology characteristic? A) Single path B) Multiple paths C) Central hub D) Linear
Q40 Gateway operates at? A) Layer 1 B) Layer 7 C) Layer 2 D) Layer 3 Q42 Fiber optic advantage?	Q41 Twisted pair cable type? A) UTP B) STP C) FTP D) All Q43 TCP provides?

A) Cheap B) Heavy C) Immune to EMI D) Thick	A) Connectionless B) Reliable delivery C) Best effort D) Unreliable
Q44 HTTP default port? A) 21 B) 80 C) 443 D) 25	Q45 Firewall protection against? A) Hardware failure B) Unauthorized access C) Virus only D) Data loss
Q46 Virus spreads via? A) Hardware B) Executable files C) RAM D) CPU	Q47 HTTPS uses? A) Port 80 B) SSL/TLS C) FTP D) SMTP
Q48 Primary key characteristic? A) Null allowed B) Duplicate allowed C) Unique identifier D) Multiple	Q49 Foreign key references? A) Same table B) Primary key another table C) Any column D) Index
Q50 Cardinality means? A) Number of attributes B) Number of tuples C) Degree D) Domain	Q51 Candidate key property? A) Single only B) Can be primary C) Nullable D) Duplicate
Q52 Tuple represents? A) Column B) Row C) Table D) Database	Q53 DDL command example? A) INSERT B) CREATE TABLE C) UPDATE D) SELECT
Q54 ALTER TABLE used for? A) Insert data B) Modify structure C) Delete data D) Query	Q55 GROUP BY with aggregate function? A) SUM() B) WHERE C) ORDER BY D) JOIN
Q56 ORDER BY col DESC sorts? A) Ascending B) Descending C) Random D) No sort	Q57 DELETE vs DROP? A) Same B) DELETE removes rows, DROP removes table C) Opposite D) No difference
Q58 COUNT(*) counts? A) Non-null B) All rows C) Distinct D) Columns	Q59 HAVING clause filters? A) Rows B) Groups C) Columns D) Tables
Q60 VARCHAR(20) max length? A) 10 B) 20 chars C) 20 bytes D) Unlimited	Q61 UPDATE syntax includes? A) SET B) WHERE C) Both D) None
Q62 Module for MySQL connection? A) sqlite3 B) mysql.connector C) pymysql D) psycopg2	Q63 Connection syntax? A) connect() B) mysql.connect() C) MySQL() D) open()
Q64 Cursor purpose? A) Connect DB B) Execute queries C) Close connection D) Fetch data	Q65 fetchone() returns? A) All rows B) Single row C) Column D) None
Q66 Close resources order? A) Connection first B) Cursor first	Q67 Which of the following is an immutable data type in Python?

C) Either D) Not needed	(a) List (b) Dictionary (c) Tuple (d) Set
Q68 What will be the output of the following Python code? def modify(x): x += 1 print(x, end=' ') x = 10 modify(x) print(x) (a) 11 10 (b) 11 11 (c) 10 11 (d) Error	Q69 Which of the following statements is true regarding the scope of variables in Python? (a) Global variables can only be accessed, not modified, within a function without the global keyword. (b) Local variables can be accessed outside the function they are defined in. (c) The global keyword is used to declare a variable as local. (d) Variable declaration is mandatory in Python.
Q70 Which block is always executed whether an exception occurs or not in Python? (a) try (b) except (c) finally (d) raise —----------	Q71 What is the output of the following code if the file data.txt does not exist? try: with open('data.txt', 'r') as f: print(f.read()) except FileNotFoundError: print("File not found!") except: print("Some other error!") (a) The content of data.txt (b) Some other error! (c) File not found! (d) Error
Q72 Which mode should be used to open a text file for both reading and writing, with the cursor placed at the beginning? (a) 'a+' (b) 'w+' (c) 'r+' (d) 'rb+'	
Q73 Which module in Python is used for working with binary files? (a) binary (b) pickle (c) struct (d) file	Q74 Which function is used to write a list of strings to a text file? (a) write() (b) writeline() (c) writelines() (d) output()
Q75 The seek(offset, from_what) method is used to change the file position. What does the value 1 for from_what signify? (a) Beginning of the file (b) Current position of the file pointer (c) End of the file (d) Start of the next line	Q76 When reading a CSV file, which method is typically used to read data row by row? (a) reader() (b) readrow() (c) load() (d) readline()
Q77 Which method of the pickle module is used to read data from a binary file? (a) dump() (b) load() (c) read() (d) import()	Q78 What will be the output of f.tell() immediately after opening a text file in 'r' mode? (a) 0 (b) 1 (c) The size of the file (d) Error

Q79 Which data structure follows the LIFO (Last-In-First-Out) principle? (a) Queue (b) List (c) Stack (d) Tree	Q80 Which Python operation is equivalent to the push operation in a stack implemented using a list? (a) list.pop() (b) list.insert() (c) list.append() (d) list.remove()
Q81 The term used for removing an element from a stack is: (a) Insert (b) Append (c) Pull (d) Pop	Q82 What is the output of print(10-3**2**2+144/12)? (a) -79 (b) -79.0 (c) 13 (d) 13.0
Q83 Which operator has the highest precedence in Python? (a) * (b) + (c) ** (d) %	Q84 Which of the following functions is a built-in function in Python? (a) randint() (b) sqrt() (c) print() (d) dump()
Q85 What value does a Python function return if it doesn't have a return statement? (a) 0 (b) None (c) Null (d) False	Q86 What is the output of the expression 5 < 10 and 12 > 7 or not 7 > 4? (a) True (b) False (c) NULL (d) Error
Q87 Which of the following is NOT a valid Python identifier? (a) _myVar (b) myVar2 (c) 2myVar (d) my_var	Q88 What is the output of the following code snippet? d = {1: 'one', 2: 'two', 3: 'three'} print(d.get(4, 'four')) (a) None (b) four (c) Error (d) 4
Q89 Which method is used to remove an item from a list at a specific index? (a) remove() (b) pop() (c) delete() (d) clear()	Q90 Which of the following statements about tuples is true? (a) Tuples are mutable. (b) Elements of a tuple can be modified after creation. (c) Tuples are ordered collections of elements that cannot be changed. (d) Tuples support the append() method.
Q91 What is the output of "Hello".replace('l', 'p')? (a) Heppo (b) Hepo (c) Hlp (d) Error	Q92 Which of the following statements creates an empty dictionary in Python? (a) d = () (b) d = [] (c) d = {} (d) d = <dict>
Q93 What is the primary purpose of the random module in Python? (a) To perform complex mathematical operations. (b) To generate pseudo-random numbers. (c) To handle exceptions. (d) To work with dates and times.	Q94 The process of converting an object into a byte stream for storage or transmission is called: (a) Encapsulation (b) Serialization (pickling) (c) Inheritance (d) Polymorphism

Q95 Which of the following was the first network to use packet switching? (a) NSFNET (b) INTERNET (c) ARPANET (d) WWW	Q96 What is the term for the set of rules that governs communication between devices on a network? (a) Media (b) Protocol (c) Bandwidth (d) IP Address
Q97 Which switching technique dedicates a physical path for the duration of the entire communication session? (a) Packet Switching (b) Circuit Switching (c) Message Switching (d) Optical Switching	Q98 The capacity of a communication medium to carry data is known as its: (a) Frequency (b) Latency (c) Bandwidth (d) Protocol
Q99 Which type of network typically covers a large geographical area, often spanning across countries? (a) PAN (b) LAN (c) MAN (d) WAN	Q100 Which method removes a key-value pair and returns value? a) delete() b) popitem() c) pop() d) remove()
Q101 Which is invalid as a dictionary key? a) 10 b) "name" c) (1,2) d) [1,2]	**Q102 Output of** `len({"a":1"b":2,"c":3})` a) 6 b) 3 c) 1 d) Error
`Q103 mydict.get("x", 0)` **returns:** a) Error b) None c) 0 if "x" not found d) "x"	**Q104 Which method returns only keys?** a) getkeys() b) keys() c) key() d) allkeys()
Q105 Output of `{"a":1, "b":2}["a"]` a) "a" b) 1 c) Error d) ['a']	**Q106 Dictionary keys must be:** a) Mutable b) Immutable c) List only d) Float only
Q107 What is the output of `dict(a=1, b=2)`**?** a) {'a':1, 'b':2} b) {1:'a', 2:'b'} c) ('a':1, 'b':2) d) Error	**Q108 Output of** `[1,2,3].pop()` a) [1,2] b) 3 c) Error d) 1
Q109 Which method deletes an element at a given index? a) del list[index] b) remove() c) pop(value) d) discard()	**Q110 Which removes the first matching element?** a) pop() b) remove() c) del d) discard()
Q111 Output of `list("ABC")` a) ["ABC"] b) ['A','B','C'] c) ('A','B','C') d) Error	**Q112 Output of** `len([10,[20,30],40])` a) 3 b) 4 c) 5 d) 2
Q113 Which method adds an element to the end of a list? a) append() b) add() c) push() d) insert()	**Q114 What is the output of** `[1,2,3] + [4,5]`**?** a) [1,2,3,4,5] b) [5,7,8] c) Error d) (1,2,3,4,5)

Q115 Output of `"test".index("z")` a) -1 b) None c) Error d) 0	**Q116 Output of `"abcabc".index("c")`** a) 0 b) 1 c) 2 d) 3
Q117 Difference between `find()` and `index()`? a) Both return -1 b) index() raises error if not found c) find() raises error d) Both raise error	**Q118 Output of `"banana".find("na", 3)`** a) 2 b) 3 c) 4 d) -1
Q119 If substring not found, `find()` returns: a) None b) False c) -1 d) Error	**Q120 What does `"apple".find("p",2)` return?** a) 1 b) 2 c) 0 d) -1
Q121 Which method always returns a 3-tuple? a) split() b) find() c) partition() d) index()	**Q122 Output of `"hello-world".partition("-")`:** a) ('hello', '-', 'world') b) ['hello', 'world'] c) ('hello', 'world') d) ('hello-world')
Q123 If separator not found, `partition()` returns: a) Error b) (original string, '', '') c) ('', '', original string) d) None	**Q124 Which datatype is returned by `split()`?** a) Set b) Tuple c) List d) Dictionary
Q125 What is the output of `"one two three".split(maxsplit=1)`? a) ['one', 'two', 'three'] b) ['one', 'two three'] c) ['one two', 'three'] d) Error	**Q126 What does `"hello world".split()` split on?** a) Comma b) Dot c) Space d) Nothing
Q127 What is the output of `"a,b,c".split(",")`? a) ("a","b","c") b) ["a","b","c"] c) {'a','b','c'} d) "abc"	Q128 Which merges two dictionaries? a) dict1 + dict2 b) dict1 | dict2 c) dict1 append dict2 d) merge(dict1, dict2)

Statement-Based Questions

1. Write a statement to split a string `s` using ":" as a separator .
2. Write a statement that partitions the string `"hello-world-python"` at the first "-" and explain the result.
3. Write a Python statement to find the position of the substring `"python"` in a given string.
4. Write a statement to extract the last 4 characters of a string using slicing.
5. Write a statement to count the number of occurrences of the substring `"is"` in `"This is India"`.
6. Write a statement to remove leading and trailing spaces from a string.

7. Write a Python statement using `upper()` and explain
8. Write a statement to join a list of words into a single string separated by spaces.
9. Write a statement to insert an element at the 2nd position of a list .
10. Write a statement to remove an element at index 3 using the `del` keyword.
11. Write a statement to create a new sorted list from an existing list without modifying the original list.
12. Write a Python statement to reverse a list using slicing
13. Write a Python statement to find the maximum value in a list
14. Write a statement to remove all occurrences of a particular element from a list.
15. Write a statement that concatenates two lists.
16. Write a Python statement to extract all characters from index 2 to index 7 from a string text.
17. Write a statement to find the first occurrence of the substring "code" in the string msg. Explain what value will be returned if the substring is not found.
18. Write a statement to join the list ["CBSE", "Board", "Exam"] into a single string separated with spaces..
19. Write a statement to find the first occurrence of the substring `"ing"` in the string `"learning is interesting"`.
20. Write a statement to delete an element at index 3.
21. Write a Python statement to count how many times `10` appears in a list.
22. Write a Python statement to remove all occurrences of `"Apple"`.

Assertion–Reasoning Questions

Each question has Assertion (A) and Reason (R).

Choose the correct option:

(a) Both A and R are true and R is the correct explanation of A

(b) Both A and R are true but R is NOT the correct explanation of A

(c) A is true but R is false

(d) A is false but R is true

Q1 **A:** A function with a return statement may also contain print() statements.
R: The return statement stops the function execution and sends a value back
.

Q2 **A:** List slicing in Python never raises an IndexError.
R: Slicing automatically adjusts indices beyond the list range.

Q3 **A:** Trying to access a dictionary key that does not exist raises a KeyError.

R: Dictionaries store elements using key–value pairs.

Q4 **A:** In Python, opening a file in “w” mode overwrites the existing file contents.
R: The "w" mode creates a new file if it does not exist.

Q5 **A:** CSV files store data in a structured, row–column format.
R: A CSV file uses commas to separate values.

Q6 **A:** Stack follows Last In First Out (LIFO) principle.
R: In a stack, deletion of an element is done from the top.

Q7 **A:** The WHERE clause is used to filter rows in a SELECT query.
R: The WHERE clause is always written after the FROM clause.

Q8 **A:** GROUP BY groups rows with the same values in specified columns.
R: GROUP BY must appear before ORDER BY.

Q9 **A:** UPDATE command without a WHERE clause updates all rows.
R: UPDATE is a DDL command.

Q10 **A:** HTTPS is more secure than HTTP.
R: HTTPS encrypts data using SSL/TLS.

Q11.**A:** Bus topology is highly fault tolerant.
R: In bus topology, failure of the backbone cable affects the whole network.

Q12 **A:** IPv6 provides a much larger address space than IPv4.
R: IPv6 uses 128-bit addressing.

Q13 **A:** Phishing attempts to steal personal information.
R: Phishing links are often sent through email or messages.

Q14 **A:** Strong passwords help protect data.
R: A strong password uses a mix of characters but should never be changed.

Q15 **A:** Primary key uniquely identifies each record in a table.
R: Two rows in a table can have the same primary key value.

Q16 **A:** Tuples in Python are immutable.
R: The elements of a tuple can be changed after creation.

Q17 **A:** The `find()` method returns -1 if the substring is not found.
R: The `index()` method also returns -1 when substring is absent.

Q18 **A:** `pop()` removes the last element of a list by default.
R: `pop()` raises an error if the list is empty.

Q19 **A:** Negative indexing is allowed in Python lists.

R: Negative index values refer to elements from the end of the list.

Q20 **A:** A function can return multiple values in Python.
R: Python packs multiple returned values into a tuple.

Q21 **A:** Default arguments must be placed before positional arguments.
R: Python allows placing default arguments at any position.

Q22 **A:** A global variable can be accessed inside any function.
R: The `global` keyword is used to modify global variables from inside a function.

Q23 **A:** `readlines()` loads the entire file content into a list.
R: Each line becomes an element of the list.

Q24 **A:** Opening a file in “a” mode allows adding content at the end.
R: “a” mode deletes all existing content before writing.

Q25 **A:** Binary files store data in human-readable form.
R: In binary files, data is stored as bytes.

Q26 **A:** The `csv.reader()` returns each row as a list.
R: CSV files are used to store tabular data.

Q27 **A:** PRIMARY KEY cannot have NULL values.
R: PRIMARY KEY uniquely identifies each row.

Q28 **A:** ORDER BY sorts records in descending order by default.
R: ORDER BY requires the keyword DESC to sort in descending order.

Q29 **A:** The LIKE operator is used for pattern matching.
R: The “%” and “_” symbols are wildcard characters.

Q30 **A:** DISTINCT keyword removes duplicate values from output.
R: DISTINCT can be used with a single column only.

Q31 **A:** A router connects multiple networks together.
R: A router forwards data packets based on IP addresses.

Q32 **A:** MAC address identifies a device on the network physically.
R: MAC address is assigned by the manufacturer.

Q33 **A:** Wi-Fi works on radio waves.
R: Wi-Fi is a wired communication technology.

Q34 **A:** Encryption protects data from unauthorized access.
R: Encrypted data cannot be understood without decryption key.

Q35 **A:** Firewall prevents unauthorized access to network.
R: Firewall monitors and controls incoming/outgoing traffic.