केन्द्रीय विद्यालय संगठन/KENDRIYA VIDYALAYA SANGATHAN
हैदराबाद संभाग /HYDERABAD REGION

STUDENT SUPPORT MATERIAL
ON
MCQs AND COMPETENCY BASED QUESTIONS 2023-24

CLASS **XII** SUBJECT **COMPUTER SCIENCE**

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MULTIPLE CHOICE QUESTIONS (MCQs)

UNIT-1 COMPUTATIONAL THINKING AND PROGRAMMING – 2

	PYTHON REVISION TOUR
1.	Which of the following is NOT a valid variable name in Python? a) my_variable b) 123variable c) variable123 d) _variable
2.	Which of the following is a recommended practice when naming variables in Python? a) Using single letters or abbreviations for variable names to save space b) Starting variable names with an underscore (_) to indicate privacy c) Using descriptive names that convey the purpose or meaning of the variable d) Including special characters, such as @ or $, in variable names for uniqueness
3.	What will be the output of the following code? numbers = [1, 2, 3, 4, 5] total = 0 for num in numbers: total += num print(total) a) 15 b) 10 c) 5 d) 0
4.	What will be the output of the following code? numbers = [1, 2, 3, 4, 5] for i in range(len(numbers)): numbers[i] *= 2 print(numbers) a) [1, 2, 3, 4, 5] b) [2, 4, 6, 8, 10] c) [1, 4, 9, 16, 25] d) [2, 3, 4, 5, 6]

5.	What will be the output of the following code?
	numbers = [1, 2, 3, 4, 5]
	total = 0
	for num in numbers:
	  if num % 2 == 0:
	  continue
	  total += num
	print(total)
	
	a) 9 b) 6 c) 5 d) 0

6.	What will be the output of the following code? word = "Python" reversed_word = "" for char in word: reversed_word = char + reversed_word print(reversed_word) a) Python b) nohtyP c) Py d) ythoP

7.	What will be the output of the following code?
	number = 10
	while number > 0:
	  print(number)
	  number //= 2
	a) 10 5 2 1 b) 10 8 6 4 2 c) 10 5 2 d) 10 9 8 7 6 5 4 3 2 1

8.	Which of the following options correctly checks if two lists are equal in Python?

	A) list1 == list2 B) list1 is list2 C) list1.equals(list2) D) list1.compare(list2)
9.	Which of the following methods returns the index of the first occurrence of a specified value in a list? A) index() B) find() C) search() D) locate()
10.	Which of the following options correctly merges two lists in Python? A) list1 + list2 B) list1.extend(list2) C) list1.append(list2) D) list1.merge(list2)
11.	What is the output of the following code? my_list = [1, 2, 3, 4, 5] new_list = my_list[::-1] my_list[0] = 10 print(new_list) A) [1, 2, 3, 4, 5] B) [5, 4, 3, 2, 1] C) [5, 4, 3] D) [10, 2, 3, 4, 5]
12.	What is the output of the following code? my_list = [1, 2, 3, 4, 5] new_list = my_list.copy() my_list.append(6) print(new_list) A) [1, 2, 3, 4, 5] B) [1, 2, 3, 4, 5, 6] C) [1, 2, 3, 4, 5, [6]] D) [1, 2, 3, 4, 5, (6)]
13.	Which of the following options correctly splits a string into a list of words in Python? A) str.split() B) str.split(',') C) str.split(' ') D) All of the above
14.	What is the output of the following code? str1 = "Hello World" str2 = str1.replace("Hello", "Goodbye") print(str1) A) "Hello World" B) "Goodbye World" C) "Hello Goodbye" D) Error: Strings are immutable and cannot be modified.
15.	What will be the output of the following code? str1 = "Hello World" result = str1.find("W") print(result) A) 6 B) 7 C) -1 D) Error: Strings do not have a `find()` method.
16.	What will be the output of the following code? my_dict = {"apple": 3, "banana": 2, "cherry": 5} sorted_dict = sorted(my_dict) print(sorted_dict) A) ["apple", "banana", "cherry"] B) ["cherry", "banana", "apple"] C) [("apple", 3), ("banana", 2), ("cherry", 5)] D) Error: Dictionaries cannot be sorted.
17.	What is the output of the following code? my_dict = {"apple": 3, "banana": 2, "cherry": 5} keys = my_dict.keys() print(keys) A) ["apple", "banana", "cherry"] B) ["apple"] C) ["banana"] D) dict_keys(["apple", "banana", "cherry"])
18.	What does it mean for a Python object to be "immutable"?

	a) It cannot be modified or changed after it is created. b) It can only be accessed by a single thread at a time. c) It can be converted to a different data type using type casting. d) It can be modified but only within a limited range of values.
19.	What does the following code snippet do? my_string = "Hello, World!" new_string = my_string.replace("Hello", "Hi") print(new_string) a) Replaces all occurrences of "Hello" with "Hi" in the string. b) Replaces the first occurrence of "Hello" with "Hi" in the string. c) Replaces all occurrences of "Hi" with "Hello" in the string. d) Replaces the first occurrence of "Hi" with "Hello" in the string.
20.	What is the data type of the result after executing the following code? x = "Hello" y = 3 result = x * y a) str b) int c) bool d) None

FUNCTIONS,MODULES AND LIBRARIES IN PYTHON

21.	Which of the following items are present in the function header? A) function name B) parameter list C) return value D) Both A and B
22.	If return statement is not used inside the function, the function will return: A) None B) 0 C) Null D) Arbitary value
23.	What is a recursive function? A. A function that calls other function. B. A function which calls itself. C. Both A and B D. None of the above
24.	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)
25.	What is a variable defined outside a function referred to as? A) local variable B) global variable C) static Variable D) automatic variable
26.	Which one of the following is the correct way of calling a function? A) function_name() B) call function_name() C) ret function_name() D) function function_name()
27.	Identify the incorrect statement? A) The variables used inside function are called local variables. B) The local variables of a particular function can be used inside other functions, but these cannot be used in global space

	C) The variables used outside function are called global variables D) In order to change the value of global variable inside function, keyword global is used.
28.	When you create your own functions, they are called? A) built-in functions B) user-defined functions C) control functions D) None of the above

29.	What will be the output of the following code?
	def my_func():
	x = 10
	while x > 0:
	print(x)
	x -= 2
	
	my_func()
	
	a) 10 8 6 4 2 b) 10 9 8 7 6 5 4 3 2 1 c) 10 7 4 1 d) 10 5

30.	What will be the output of the following code?
	def print_pattern(n):
	for i in range(n):
	for j in range(i + 1):
	print(j + 1, end=" ")
	print()
	
	print_pattern(4)
	
	a)
	1
	1 2
	1 2 3
	1 2 3 4
	b)
	1 2 3 4
	1 2 3
	1 2
	1
	c)
	4 3 2 1
	3 2 1
	2 1
	1
	d)
	4
	3 2
	2 1

31.	What will be the output of the following code?
	def countdown(n):
	while n >= 0:
	if n == 3:
	break
	print(n)
	n -= 1
	else:
	print("Blastoff!")
	
	countdown(5)
	
	a) 5 4 b) 5 4 3 c) 5 4 3 2 1 Blastoff! d) 5 4 3 Blastoff!

32.	What will be the output of the following code?
	def compute_average(numbers):
	total = 0
	count = 0
	for num in numbers:
	total += num
	count += 1

	return total / count marks = [80, 90, 75, 95, 85] average = compute_average(marks) print("Average:", average) a) Average: 85 b) Average: 85.5 c) Average: 85.0 d) Average: 80, 90, 75, 95, 85

33.	What will be the output of the following code?
	def print_table(n):
	for i in range(1, n+1):
	for j in range(1, n+1):
	print(i * j, end=" ")
	print()
	
	print_table(3)
	
	a) 1 2 3 / 2 4 6 / 3 6 9 b) 1 1 1 / 2 2 2 / 3 3 3 c) 1 2 3 / 1 2 3 / 1 2 3 d) 1 2 3 4 / 2 4 6 8 / 3 6 9 12

34.	What will be the output of the following code? def func(x, y=2, z=3): return x + y + z result = func(1, z=4) print(result) a) 6 b) 8 c) 10 d) 11

35.	What will be the output of the following code?
	def outer_func():
	x = 2
	def inner_func():
	nonlocal x
	x += 1
	print(x)
	inner_func()
	outer_func()
	
	a) 2 b) 3 c) 4 d) Error: nonlocal declaration not allowed at module level

36.	What will be the output of the following code?
	def fibonacci(n):
	if n <= 0:
	return []
	elif n == 1:
	return [0]
	elif n == 2:
	return [0, 1]
	else:
	fib_sequence = [0, 1]
	while len(fib_sequence) < n:
	next_number = fib_sequence[-1] + fib_sequence[-2]
	fib_sequence.append(next_number)
	return fib_sequence

	result = fibonacci(8) print(result) a) [0, 1, 1, 2, 3, 5, 8] b) [0, 1, 1, 2, 3, 5, 8, 13] c) [0, 1, 2, 3, 5, 8] d) [0, 1, 2, 3, 5, 8, 13]
37.	What is the output of the following code snippet? def foo(x=0): x += 1 return x result = foo(5) + foo(3) print(result) a) 10 b) 9 c) 8 d) 7

38.	4. What does the following code snippet do?
	def factorial(n):
	if n == 0:
	return 1
	return n * factorial(n-1)
	
	result = factorial(5)
	print(result)
	
	a) Computes the sum of numbers from 1 to 5. b) Computes the product of numbers from 1 to 5.
	c) Calculates the factorial of 5. d) Raises 5 to the power of 5.

39.	What will be the output of the following code? a = 5 def foo(): global a a += 1 foo() print(a) a) 5 b) 6 c) 10 d) NameError: name 'a' is not defined

40.	What is the output of the following code snippet?
	def multiply(a, b):
	return a * b
	
	def calculate(x, y, operation=multiply):
	return operation(x, y)
	
	result = calculate(4, 5)
	print(result)
	a) 9 b) 20 c) 45 d) 25

	EXCEPTION HANDLING
41.	What is an exception in Python? a) An error b) A warning c) A function d) A class
42.	Which keyword is used to raise an exception explicitly in Python? a) catch b) throw c) raise d) try
43.	What is the purpose of the 'finally' block in a try-except statement? a) To handle exceptions b) To specify alternative code c) To execute cleanup code d) To suppress errors

44.	Which of the following is not an exception handling clause in Python? a) try b) except c) else d) throw
45.	What will be the output of the following code? try: print(10 / 0) except ZeroDivisionError: print("Error: Division by zero") a) Error: Division by zero b) Error: Index out of range c) 10 d) None of the above
46.	In a try-except block, if an exception occurs but it is not handled by any except clause, what happens? a) The program terminates b) The exception is ignored c) The program continues to execute normally d) None of the above
47.	Which keyword is used to define a block of code that will be executed if no exceptions are raised? a) try b) catch c) else d) finally
48.	What is the purpose of the 'except' clause in a try-except statement? a) To define alternative code b) To specify the type of exception to handle c) To handle multiple exceptions d) To execute cleanup code
49.	Which of the following statements is true about nested try-except blocks? a) Only one try block can be nested inside another try block b) Only one except block can be nested inside another except block c) A try block can be nested inside another try block, and an except block can be nested inside another except block d) Nesting try-except blocks is not allowed in Python
50.	10. Which exception is raised when an incorrect type of argument is passed to a function in Python? a) ValueError b) TypeError c) AttributeError d) NameError
51.	What will be the output of the following code? try: print(10 / 0) except ZeroDivisionError as e: print("Error:", str(e)) finally: print("Finally block") a) Error: Division by zero Finally block b) Error: Index out of range Finally block c) Error: None Finally block d) The code will raise an exception and terminate.
52.	What will be the output of the following code? try: raise ValueError("Custom Error") except Exception as e: print("Error:", str(e)) finally: print("Finally block") a) Error: Custom Error Finally block b) Error: ValueError

	Finally block c) Error: Exception Finally block d) The code will raise an exception and terminate.

53.	What will be the output of the following code?
	def divide(x, y):
	try:
	result = x / y
	except ZeroDivisionError:
	print("Error: Division by zero")
	else:
	print("Result:", result)
	
	divide(10, 2)
	a) Error: Division by zero b) Result: 5
	c) The code will raise an exception and terminate. d) None of the above.

54.	What will be the output of the following code?
	try:
	print("Hello" + 123)
	except TypeError:
	print("Error: Type mismatch")
	else:
	print("No error")
	a) Hello123
	No error
	b) Error: Type mismatch
	No error
	c) Error: Type mismatch d) The code will raise an exception and terminate.

55.	What will be the output of the following code? try: f = open("nonexistent_file.txt", "r") except FileNotFoundError: print("Error: File not found") finally: print("Finally block") a) Error: File not found b) Finally block Finally block c) The code will raise an exception and terminate. d) None of the above.
56.	What will be the output of the following code? try: print("Start") raise Exception("Custom Error") except Exception as e: print("Error:", str(e)) finally: print("Finally block") a) Start Error: Custom Error Finally block b) Error: Custom Error Start Finally block c) Error: Custom Error Finally block

	Start d) The code will raise an exception and terminate.

57.	What will be the output of the following code?
	def divide(x, y):
	try:
	result = x / y
	except ZeroDivisionError:
	print("Error: Division by zero")
	finally:
	print("Finally block")
	
	divide(10, 0)
	a) Error: Division by zero b) Finally block
	Finally block
	c) The code will raise an exception and terminate. d) None of the above.

58.	What will be the output of the following code?
	try:
	print(10 / "abc")
	except TypeError:
	print("Error: Type mismatch")
	else:
	print("No error")
	finally:
	print("Finally block")
	a) Error: Type mismatch
	Finally block
	b) No error
	Finally block
	c) Error: Type mismatch
	No error
	d) The code will raise an exception and terminate.

59.	What will be the output of the following code?
	try:
	x = 10
	y = 0
	result = x / y
	except ZeroDivisionError:
	print("Error: Division by zero")
	except Exception:
	print("Error: Some other exception")
	else:
	print("Result:", result)
	finally:
	print("Finally block")
	a) Error: Division by zero
	Finally block
	b) Error: Some other exception
	Finally block
	c) Result: Infinity
	Finally block
	d) The code will raise an exception and terminate.

60. What will be the output of the following code?

```
try:
   raise NameError("Custom Error")
except ValueError:
    print("Error: ValueError")
except NameError:
    print("Error: NameError")
else:
    print("No error")
```

a) Error: ValueError b) Error: NameError
c) No error d) The code will raise an exception and terminate.

DATA FILE HANDLING - TEXT FILES

61. Which of the following functions is used to open a file in Python for reading?

a) read() b) open() c) write() d) close()

62. What is the correct syntax to open a file named "data.txt" in write mode in Python?

a) file = open("data.txt", "r") b) file = open("data.txt", "w")
c) file = open("data.txt", "a") d) file = open("data.txt", "x")

63. Which method is used to read a single line from a file object in Python?

a) readlines() b) readline() c) read() d) write()

64. Which of the following modes in file handling allows both reading and writing to a file in Python?

a) "r" b) "w" c) "a" d) "r+"

65. What is the purpose of the seek() method in file handling?

a) To close the file after reading or writing
b) To move the file pointer to a specific position in the file
c) To check if the file is readable or writable
d) To delete the contents of the file

66. Which method is used to write a string to a file in Python?

a) write() b) read() c) append() d) delete()

67. What is the correct way to close a file object after reading or writing in Python?

a) file.close() b) close(file) c) file.exit() d) exit(file)

68. Which method is used to check the current position of the file pointer in Python?

a) current() b) position() c) tell() d) pointer()

69. How can you read the contents of a file line by line in Python?

a) Use the readlines() method b) Use the read() method
c) Use the write() method d) Use the close() method

70.	Which method is used to read the entire contents of a file as a single string? a) read() b) readline() c) readlines() d) write()
71.	How can you ensure that a file is automatically closed after its operations are completed? a) Using the close() method b) Using the flush() method c) Using the with statement d) None of the above
72.	How do you check if a file exists before opening it in Python? a) Use the exists() function from the os module b) Use the open() function with the try-except block c) Use the isfile() function from the os.path module d) All of the above
73.	Which mode should be used when opening a file for reading only? a) 'r' b) 'w' c) 'a' d) 'x'
74.	Which of the following statements is true regarding file objects in Python? a) File objects can be directly printed to display their contents. b) File objects can only be used for reading files, not writing. c) File objects have a 'write' method but not a 'read' method. d) File objects must be explicitly closed using the 'close' method.
75.	Consider the following code snippet: file = open("data.txt", "r") content = file.read() file.close() print(content) What does this code do? A) Opens the "data.txt" file in read mode, reads its contents, closes the file, and prints the content. B) Opens the "data.txt" file in write mode, reads its contents, closes the file, and prints the content. C) Opens the "data.txt" file in read mode, writes new content, closes the file, and prints the content. D) Opens the "data.txt" file in read mode, appends new content, closes the file, and prints the content.
76.	Consider the following code snippet: file = open("data.txt", "w") file.write("Hello, World!") file.close() What does this code do? A) Opens the "data.txt" file in read mode, reads its contents, and writes "Hello, World!" to the file. B) Opens the "data.txt" file in write mode, writes "Hello, World!" to the file, and closes the file. C) Opens the "data.txt" file in write mode, reads its contents, and writes "Hello, World!" to the file. D) Opens the "data.txt" file in append mode, appends "Hello, World!" to the file, and closes the file.
77.	Consider the following code snippet: file = open("data.txt", "a") file.write("Hello, World!") file.close() What does this code do?

	A) Opens the "data.txt" file in read mode, reads its contents, and appends "Hello, World!" to the file. B) Opens the "data.txt" file in write mode, writes "Hello, World!" to the file, and closes the file. C) Opens the "data.txt" file in append mode, appends "Hello, World!" to the file, and closes the file. D) Opens the "data.txt" file in append mode, reads its contents, and appends "Hello, World!" to the file.
78.	Consider the following code snippet: file = open("data.txt", "r") lines = file.readlines() file.close() print(len(lines)) What does this code do? A) Opens the "data.txt" file in write mode, reads the number of lines in the file, closes the file, and prints the count. B) Opens the "data.txt" file in read mode, reads the number of lines in the file, closes the file, and prints the count. C) Opens the "data.txt" file in append mode, reads the number of lines in the file, closes the file, and prints the count. D) Opens the "data.txt" file in read mode, writes the number of lines in the file, closes the file, and prints the count.
79.	Consider the following code snippet: file = open("data.txt", "w") file.writelines(["Hello\n", "World\n"]) file.close() What does this code do? A) Opens the "data.txt" file in write mode, writes "Hello" and "World" on separate lines, and closes the file. B) Opens the "data.txt" file in read mode, reads "Hello" and "World" from the file, and closes the file. C) Opens the "data.txt" file in append mode, appends "Hello" and "World" to the file on separate lines, and closes the file. D) Opens the "data.txt" file in write mode, appends "Hello" and "World" to the file on separate lines, and closes the file.
80.	Consider the following code snippet: file = open("data.txt", "r") for line in file: print(line.strip()) file.close() What does this code do? A) Opens the "data.txt" file in read mode, reads and prints each line without any leading or trailing whitespace, and closes the file. B) Opens the "data.txt" file in read mode, reads and prints each line with leading and trailing whitespace, and closes the file. C) Opens the "data.txt" file in write mode, writes each line to the file without any leading or trailing whitespace, and closes the file. D) Opens the "data.txt" file in append mode, appends each line to the file with leading and trailing whitespace, and closes the file.

DATA FILE HANDLING - BINARY FILES

81.	Which of the following modes should be used when opening a binary file for reading? a) "r" b) "rb" c) "read" d) "binary"
82.	Which of the following code snippets correctly opens a binary file named "data.bin" in write mode and writes binary data into it? a) file = open("data.bin", "write") file.write(b'\x00\x01\x02') file.close() b) file = open("data.bin", "wb") file.write(b'\x00\x01\x02') file.close() c) file = open("data.bin", "w") file.write(b'\x00\x01\x02') file.close() d) file = open("data.bin", "write_binary") file.write(b'\x00\x01\x02') file.close()
83.	Which of the following is not true about binary files? a) Binary files are store in terms of bytes b) When you open binary file in text editor will show garbage values c) Binary files represent ASCII value of characters d) All of the above
84.	What is the difference between wb and wb+ mode? a) wb mode is used to open binary file in write mode and wb+ mode open binary file both for read and write operation. b) In wb mode file open in write mode and wb+ in read mode c) File pointer is at beginning of file in wb mode and in wb+ at the end of file d) No difference
85.	The pickle module in Python is used for? a) Serializing any Python object structure b) De-serializing Python object structure c) Both a and b d) None of these
86.	Which method is used to convert Python objects for writing data in binary file? a) write() b) load() c) store() d) dump()
87.	Which is not the valid mode for binary files? a) r b) rb c) wb d) wb+

88.	Which of the following function is used to read the data in binary file? a) read() b) open() c) dump() d) load()
89.	Which of the given method returns an integer that specifies the current position of the file object. a) seek() b) load() c) position() d) tell()
90.	What is the purpose of the seek() method in binary file handling? a) To set the file pointer to a specific position. b) To read the entire contents of a binary file. c) To write binary data to a file. d) To check if a file exists.
91.	Which of the following code snippets correctly opens a binary file named "data.bin" in append mode and appends binary data to it? a) file = open("data.bin", "append") file.write(b'\x03\x04\x05') file.close() b) file = open("data.bin", "ab") file.write(b'\x03\x04\x05') file.close() c) file = open("data.bin", "a") file.write(b'\x03\x04\x05') file.close() d) file = open("data.bin", "wb") file.write(b'\x03\x04\x05') file.close()
92.	Which method is used to close a binary file in Python? a) close() b) exit() c) terminate() d) end()
93.	Which of the following statements is true about binary file handling in Python? a) Binary files can only be read, not written. b) Binary files can only be written, not read. c) Binary files can be both read and written. d) Binary files are not supported in Python.
94.	What happens if you try to open a non-existent binary file in read mode? a) An error is raised. b) An empty binary file is created. c) The file is created automatically. d) The program continues to run without any issues.
95.	Which method is used to check if the end of a binary file has been reached? a) is_end_of_file() b) end_of_file() c) eof() d) at_end()
96.	Which method is used to get the size of a binary file in Python? a) get_size() b) size() c) file_size() d) os.path.getsize()
97.	Which method is used to move the file pointer to the beginning of a binary file? a) start() b) move_to_start() c) seek(0) d) seek(1)
98.	What is the purpose of the flush() method in binary file handling? a) To write binary data to a file.

	b) To check if a file exists. c) To get the current position of the file pointer. d) To ensure that all data is written to the file.
99.	What is the purpose of the is_closed() method in binary file handling? a) To check if a binary file has been opened. b) To check if a binary file is read-only. c) To check if a binary file exists. d) To check if a binary file has been closed.
100.	Which of the following code snippets correctly opens a binary file named "data.bin" in read mode and moves the file pointer to the 10th byte? a) file = open("data.bin", "rb") file.seek(10) data = file.read() file.close() b) file = open("data.bin", "rb") file.move_to(10) data = file.read() file.close() c) file = open("data.bin", "rb") file.start() data = file.read() file.close() d) file = open("data.bin", "rb") file.seek(1) data = file.read() file.close()

DATA FILE HANDLING - CSV FILES

101.	Which module in Python is commonly used for CSV file handling? a) os b) sys c) csv d) fileio
102.	To open a CSV file in Python, which function should you use? a) open() b) read_csv() c) csv.reader() d) load_csv()
103.	How can you read a CSV file using the `csv` module in Python? a) csv.read() b) csv.load() c) csv.reader() d) csv.open()
104.	What is the delimiter character used in a CSV file by default? a) Comma (`,`) b) Tab (`\t`) c) Pipe (`|`) d) Space (` `)
105.	Which method is used to iterate over the rows of a CSV file using the `csv.reader()` object? a) next() b) read() c) iterate() d) for loop
106.	What does the `writerow()` method do in the `csv.writer` object? a) Reads a row from a CSV file b) Writes a row to a CSV file c) Deletes a row from a CSV file d) Modifies a row in a CSV file

107.	How do you write a header row in a CSV file using the `csv.writer` object? a) Use the `writeheader()` method b) Use the `write_row()` method c) Use the `write()` method d) Use the `header()` method
108.	Which function is used to write data to a CSV file in Python? a) write_csv() b) save_csv() c) csv.writer() d) csv.write()
109.	How can you specify a different delimiter character when writing a CSV file using the `csv.writer` object? a) It is not possible to change the delimiter b) Use the `delimiter` parameter in the `csv.writer()` function c) Use the `set_delimiter()` method after creating the `csv.writer` object d) Use the `change_delimiter()` method before calling the `write()` method
110.	How can you handle special characters in a CSV file using the `csv.writer` object? a) Special characters are automatically handled b) Use the `handle_special_chars()` method before calling the `write()` method c) Use the `quotechar` parameter in the `csv.writer()` function d) Special characters are not allowed in CSV files
111.	What does the `newline` parameter in the `open()` function do when working with CSV files? a) It specifies the character encoding of the CSV file b) It sets the file mode to binary c) It controls how universal newlines are handled d) It indicates the number of newlines to append to the file
112.	How can you close a CSV file after you have finished working with it? a) Use the `close()` method on the `csv.reader` object b) Use the `close()` method on the `csv.writer` object c) Use the `close()` method on the file object returned by `open()` d) CSV files are automatically closed when the program finishes
113.	What is the recommended way to handle exceptions when working with CSV files? a) Ignore exceptions as they are rare in CSV file handling b) Use the `try-except` block to catch and handle exceptions c) Use the `csv.exception()` function to handle exceptions d) Exception handling is not necessary when working with CSV files
114.	How can you skip the header row when reading a CSV file using the `csv.reader` object? a) Use the `skip_header()` method before iterating over rows b) Use the `skiprow` parameter in the `csv.reader()` function c) Skip the first row manually in the `for` loop d) CSV files do not have header rows
115.	What is the purpose of the `Dialect` class in the `csv` module? a) It defines the format of a CSV file b) It provides methods to manipulate CSV files c) It handles errors and exceptions in CSV file handling d) The `Dialect` class is not used in the `csv` module
116.	How can you read a CSV file into a list of dictionaries in Python? a) Use the `csv.reader` object directly b) Use the `csv.DictReader` object c) Use the `read_csv()` function from the `pandas` library d) Convert each row manually into a dictionary
117.	17. What is the difference between `csv.reader` and `csv.DictReader`? a) `csv.reader` returns a list of lists, while `csv.DictReader` returns a list of dictionaries b) `csv.reader` is used for reading CSV files, while `csv.DictReader` is used for writing CSV files

	c) There is no difference; they can be used interchangeably d) `csv.reader` is a class, while `csv.DictReader` is a function
118.	Which method is used to write a row of data in a CSV file using the `csv.DictWriter` object? a) write_row() b) write_rowdata() c) write_dict() d) writerow()
119.	How can you specify the fieldnames for a CSV file using the `csv.DictWriter` object? a) Pass them as a list to the `fieldnames` parameter in the `csv.DictWriter()` function b) Use the `set_fieldnames()` method after creating the `csv.DictWriter` object c) Specify them as the first row in the CSV file d) Fieldnames are not required when using the `csv.DictWriter` object
120.	How can you handle quoted values in a CSV file using the `csv` module in Python? a) Quoted values are automatically handled by the `csv.reader` object b) Use the `handle_quoted_values()` method before reading the file c) Use the `quotechar` parameter in the `csv.reader()` function d) Quoted values are not supported in CSV files

DATA STRUCTURES

121	Process of inserting an element in stack is called _____ a) Create b)Push c)Evaluation d)Pop
122	Process of removing an element from stack is called_____ a) Create b) Push c) Evaluation d)Pod
123	In a stack, if a user tries to remove an element from empty stack it is called _____ a) Underflow b)Empty collection c)Overflow d)Garbage Collection
124	Pushinganelementintostackalreadyhavingfiveelementsandstacksizeof5,thenstackbecomes a) Overflow b)Crash c)Underflow d) Userflow
125	Entries in a stack are “ordered”. What is the meaning of this statement? a) A collection of stacks is sortable b) Stack entries may be compared with the‘<‘operation c) The entries are stored in a linked list d) There is a Sequential entry that is one by one
126	Which of the following applications may use a stack? a) A parentheses balancing program b)Tracking of local variables at runtime c)Compiler Syntax Analyzer d) All of the mentioned
127	Consider the usual algorithm for determining whether a sequence of parentheses is balanced. The maximum number of parentheses that appear on the stack AT ANY ONE TIME when the algorithm analyzes: (()(())(()))are: a) 1 b)2 c)3 d)4 or more
128	Consider the usual algorithm for determining whether a sequence of parentheses is balanced. Suppose that you run the algorithm on a sequence that contains 2 left parentheses and 3 right parentheses (in some order).The maximum number of parentheses that appear on the stack AT ANY ONE TIME during the computation? a) 1 b)2 c)3 d) 4 or more

129	What is the valueofthepostfixexpression6 32 4 +–*: a) Something between -5and -15 b)Something between 5and -5 c)Something between 5 and 15 d)Something between 15 and 100
130	Here is an infix expression: 4 + 3*(6*3-12). Suppose that we are using the usual stack algorithm to convert the expression from infix to post fix notation. The maximum number of symbols that will appear on the stack AT ONE TIME during the conversion of this expression? a) 1 b)2 c)3 d)4
131	A linear list of elements in which deletion can be done from one end (front) and insertion can take place only at the other end(rear)is known as a_____ a) Queue b)Stack c)Tree d) Linkedlist
132	A queue is a_____ a) FIFO(First In First Out) list b) LIFO(Last In First Out)list c)Ordered array d) Linear tree
133	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? a) ABCD b) DCBA c)DCAB d) ABDC
134	A data structure in which elements can be inserted or deleted at / from both the ends but not in the middle is? a) Queue b) Circular queue c) Dequeue d) Priority queue
135	Any arithmetic expression can be represented in any of the notation. a) Infix b) Prefix c)Postfix d) All the above.
136	What is the value of the postfix expression 6 3 2 4 + – *? a) 1 b) 40 c) 74 d) -18
137	Here is an infix expression: 4 + 3*(6*3-12). Suppose that we are using the usual stack algorithm to convert the expression from infix to postfix notation. The maximum number of symbols that will appear on the stack AT ONE TIME during the conversion of this expression? a) 1 b) 2 c) 3 d) 4
138	Convert the following infix expressions into its equivalent postfix expressions. **(A + B ∧D)/(E – F)+G** a) (A B D ∧ + E F – / G +) b) (A B D +∧ E F – / G +) c) (A B D ∧ + E F/- G +) d) (A B D E F + ∧ / – G +)
139	The result of evaluating the postfix expression 5, 4, 6, +, *, 4, 9, 3, /, +, * is? a) 600 b) 350 c) 650 d) 588
140	Convert the following Infix expression to Postfix form using a stack. **x + y * z + (p * q + r) * s**, Follow usual precedence rule and assume that the expression is legal. a) xyz*+pq*r+s*+ b) xyz*+pq*r+s+* c) xyz+*pq*r+s*+ d) xyzp+**qr+s*+

INTERFACE PYTHON WITH SQL, DATABASE MANAGEMENT SYSTEM

141	Which of the following package must be imported in Python to create a database connectivity application? a) mysql.connector b) mysql.connect c) sql.connector d) sql.execute
142	Which of the following component act as a container to hold all the data returned from the query and from there we can fetch data one at a time? a)ResultSet b). Cursor c.) Container d). Table
143	Which attribute of cursor is used to get number of records stored in cursor (Assuming cursor name is mycursor)? a. mycursor.count b. mycursor.row_count c. mycursor.records d. mycursor.rowcount
144	To make the changes made by any SQL Queries permanently in database, which function is used after execution of the query ? a) save() b) commit() c) execute() d) dump()
145	Which command is used to open the database "SCHOOL"? a. USE SCHOOL b. OPEN SCHOOL c. USE DATABASE SCHOOL D.SHOW SCHOOL
146	Which SQL keyword is used to retrieve only unique values? a) DISTINCTIVE b) UNIQUE c) DISTINCT d) DIFFERENT
147	Which SQL keyword is used to sort the result-set? a) SORT BY b) ORDER c) ORDER BY d) SORT
148	Which of the following function is used to FIND the largest value from the given data in MYSQL? a) MAX () b) MAXIMUM () c) LARGEST () d) BIG ()
149	The data types CHAR (n) and VARCHAR (n) are used to create _____ and _____ types of string/text fields in a database. a) Fixed, equal b) Equal, variable c) Fixed, variable d) Variable, equal
150	***SELECT name FROM stu WHERE subject LIKE '_____ Computer Science';*** Which one of the following has to be added into the blank space to select the subject which has Computer Science as its ending string? a) $ b) _ c) || d) %
151	*Consider following SQL statement. What type of statement is this?* ***DELETE FROM employee;*** a) DML b) DDL c) DCL d) Integrity constraint
152	Which of the following function is not an aggregate function? a) Round() b) Sum() c) Count () d) Avg ()
153	Select correct SQL query from below to find the temperature in increasing order of all cites(Table name:weather). a) SELECT city, temperature FROM weather ORDER temperature; b) SELECT city, temperature FROM weather ASC; c) SELECT city, temperature FROM weather ORDER BY temperature; d) SELECT city, temperature FROM weather ORDER BY city;

154	An attribute in a relation is foreign key if it is the _____key in any other relation. a) Candidate b) Primary c) Super d) Sub
155	In the given query which keyword has to be inserted? ***INSERT INTO employee_____(1002, "Kausar", 2000);*** a) Value b) Values c) Values into d) Into Values
156	***SELECT name FROM class WHERE subject_____NULL;*** Which comparison operator may be used to fill the blank space in above query? a) = b) LIKE c) IS/IS Not d) if
157	Which SQL function is used to count the number of rows in a SQL query? a) COUNT () b) NUMBER () c) SUM () d) COUNT (*)
158	Which operator is used to impose Condition Based on a list a.LIKE b.IN c.IS d.WHERE
159	Which command is used to change the number of columns in a table? a.UPDATE b.ADD c.ALTER d.RENAME
160	Which join combines each row from the first table with every row from the right table to make the result set? a. CROSS JOIN b.OUTER JOIN c. INNER JOIN d.EQUI JOIN
161	Which one of the following is not an aggregate function? A. Min B. Sum C. With D. Avg
162	In SQL, this function returns the time at which the function executes: A. SYSDATE B. NOW C. CURRENT D. TIME
163	Which type of values will not considered by SQL while executing the following statement? SELECT COUNT(column name) FROM INVENTORY; A. Numeric value B. Text value C. Null value D. Date value
164	Which of the following is a DDL command? A.UPDATE B. INSERT C. DELETE D. ALTER
165	Raj, a Database Administrator, needs to display the average pay of workers from those departments which have more than five employees. He is experiencing a problem while running the following query: **SELECT DEPT, AVG(SAL) FROM EMP WHERE COUNT(*) > 5 GROUP BY DEPT;** Which of the following is a correct query to perform the given task? A. SELECT DEPT, AVG(SAL) FROM EMP WHERE COUNT(*) > 5 GROUP BY DEPT; B. SELECT DEPT,AVG(SAL) FROM EMP HAVING COUNT(*) > 5 GROUP BY DEPT; C. SELECT DEPT, AVG(SAL) FROM EMP GROUP BY DEPT WHERE COUNT(*) > 5; D. SELECT DEPT, AVG(SAL) FROM EMP GROUP BY DEPT HAVING COUNT(*)> 5;
166	The correct SQL from below to find the temperature in increasing order of all cities. A. SELECT city FROM weather order by temperature; B. SELECT city, temperature FROM weather; C. SELECT city, temperature FROM weather ORDER BY temperature; D. SELECT city, temperature FROM weather ORDER BY city;

167	Which of the following is not a category of MySQL functions? A. Text Functions B. Mathematical Functions C. Statistical Functions D. Arithmetic Functions
168	Where and Having clauses can be used interchangeably in SELECT queries? A. True B. False C. Only in views D. With order by
169	Which SQL statement is used to display all the data from product table in the decreasing order of price? A. SELECT * FROM PRODUCT; B. SELECT * FROM PRODUCT ORDER BY PRICE; C. SELECT * FROM PRODUCT ORDER BY PRICE DESC; D. SELECT * FROM PRODUCT ORDER BY DESC;
170	Which clause is used with "aggregate functions"? A. GROUP BY B. SELECT C. WHERE D. Both A and B

COMPUTER NETWORKS

171	In computer networks, what does MAC stand for? a) Media Access Control b) Master of Computer Science c) Multi-Area Configuration d) Memory Access Controller
172	What was the first network that laid the foundation for the modern Internet? a) ARPANET b) NSFNET c) INTERNET d) WWWNET
173	In which switching technique is data divided into small packets before transmission? a) Circuit switching b) Packet switching c) Virtual switching d) Frequency switching
174	What is the function of a protocol in data communication? a) To define the physical media used for communication b) To measure the bandwidth of a network connection c) To facilitate the exchange of data between devices d) To secure the transmission of data over the internet
175	What is the unit used to measure the data transfer rate of a communication channel? a) Bandwidth b) Hertz c) Baud d) Mbps
176	Which transmission media is known for its high bandwidth and immunity to electromagnetic interference? a) Twisted pair cable b) Co-axial cable c) Fiber-optic cable d) Radio waves
177	What is the purpose of a modem in a computer network? a) To connect devices within a local area network b) To transmit data over long distances using radio waves c) To convert digital signals to analog signals and vice versa d) To route data packets between different networks

178	Which network device operates at the physical layer of the OSI model? a) Repeater b) Hub c) Switch d) Router
179	.Which network topology connects all devices in a linear fashion? a) Bus b) Star c) Tree d) Mesh
180	What does the acronym PAN stand for in computer networking? a) Public Area Network b) Personal Area Network c) Private Access Network d) Peer-to-Peer Network
181	Which protocol is used for transferring files over the internet? a) HTTP b) FTP c) SMTP d) TCP/IP
182	What does the acronym IP stand for in IP address? a) Internet Provider b) Internet Port c) Internet Protocol d) Internet Proxy
183	Which network protocol is used for sending and receiving email? a) PPP b) SMTP c) POP3 d) HTTPS
184	Which network protocol is used to establish a secure connection for websites? a) FTP b) SMTP c) HTTPS d) TELNET
185	Which markup language is used for creating web pages? a) HTML b) XML c) CSS d) PHP
186	What is the purpose of a URL in web browsing? a) To identify the user's computer on the network b) To specify the search keywords for a search engine c) To provide the IP address of a web server d) To specify the web page's address on the internet
187	What is the function of a web server? a) To host websites and serve web pages to clients b) To encrypt data transmitted over the internet c) To convert IP addresses to domain names d) To provide email services
188	Which network type covers a small geographical area, like an office or a building? a) PAN b) LAN c) MAN d) WAN
189	Which network topology connects all devices to a central hub? a) Bus b) Sta c) Tree d) Mesh
190	What does VoIP stand for in computer networking? a) Voice over Internet Protocol b) Video over Internet Protocol c) Virtual Office Internet Protocol d) Voice of Internet Providers
191	. Which device is used to regenerate the signals over long distance data transmission? a)Switch b) Modem c) Repeater d) None of the above
192	Which one is False about MAC address? a)It is Physical Address of any device connected to the internet. b) We can change MAC address of a device.

	c) It is the address of NIC card install in network device. d) It is used for track the user's over internet.
193	A computer network created by connecting the computers of your school's computer lab is an example of a)LAN b) MAN c) WAN d) PAN
194	Which topology are all the nodes connected through a single coaxial cable? a) Star b) Tree c) Bus d) Ring
195	. URL stands for a) Universal Resource Locator b) Uniform Resource Locator c) Universal Range Limit d) None of the above
196	An online activity that enables us to publish website or web application on the internet a) Web server b) Web Browser c) Web Hosting d)None
197	Website stores the browsing activity through: a) web page b) Cookies c) passwords d) server
198	The device used to connect two networks using different protocols is: a) Router b) Repeater c) Gateway d)Hub
199	Which protocol allows you to make voice calls using a broadband Internet connection? a)Chat b)ftp c)email d)VoIP
200	Microsoft edge is an example of _____. a)Web Page b) Web server c) Website d)Web Browser

ANSWERS TO MCQs

Q.NO	1	2	3	4	5	6	7	8	9	10
ANSWER	B	C	A	B	A	B	A	A	A	A
Q.NO	11	12	13	14	15	16	17	18	19	20
ANSWER	B	A	D	A	A	A	D	A	A	A
QNO	21	22	23	24	25	26	27	28	29	30
ANSWER	D	A	B	C	B	A	B	B	A	A
QNO	31	32	33	34	35	36	37	38	39	40
ANSWER	D	B	A	C	B	A	A	C	B	B
QNO	41	42	43	44	45	46	47	48	49	50
ANSWER	A	C	C	D	A	A	C	B	C	B
QNO	51	52	53	54	55	56	57	58	59	60
ANSWER	A	A	B	C	A	B	A	A	A	B
QNO	61	62	63	64	65	66	67	68	69	70
ANSWER	B	B	B	D	B	A	A	C	A	A
QNO	71	72	73	74	75	76	77	78	79	80
ANSWER	C	D	A	D	A	B	C	B	A	A
QNO	81	82	83	84	85	86	87	88	89	90
ANSWER	B	B	C	A	C	D	A	D	D	A
QNO	91	92	93	94	95	96	97	98	99	100
ANSWER	B	A	C	A	C	D	C	D	D	A
QNO	101	102	103	104	105	106	107	108	109	110
ANSWER	C	A	C	A	D	B	A	C	B	C
QNO	111	112	113	114	115	116	117	118	119	120
ANSWER	C	C	B	C	A	B	A	D	A	C
QNO	121	122	123	124	125	126	127	128	129	130
ANSWER	B	D	A	A	D	D	C	B	D	D
QNO	131	132	133	134	135	136	137	138	139	140
ANSWER	A	A	A	C	D	D	D	A	B	A
QNO	141	142	143	144	145	146	147	148	149	150
ANSWER	A	B	D	B	A	C	C	A	C	D
QNO	151	152	153	154	155	156	157	158	159	160
ANSWER	B	A	C	B	B	C	D	B	C	A
QNO	161	162	163	164	165	166	167	168	169	170
ANSWER	C	A	C	D	D	D	D	B	C	A
QNO	171	172	173	174	175	176	177	178	179	180
ANSWER	A	A	B	C	D	C	C	A	A	B
QNO	181	182	183	184	185	186	187	188	189	190
ANSWER	B	C	B	C	A	D	A	B	B	A
QNO	191	192	193	194	195	196	197	198	199	200
ANSWER	V	B	A	C	B	C	B	C	D	D

COMPETENCY BASED QUESTIONS

	CLASS XI REVISION TOUR – CASE BASED QUESTIONS
1.	You have a list of names ["Alice", "Bob", "Charlie", "David"]. You want to print only the names that have more than 4 characters using a 'for loop'. Which of the following code snippets accomplishes this?

a)	names = ["Alice", "Bob", "Charlie", "David"]
	for name in names:
	  if len(name) > 4:
	  print(name)

b)	names = ["Alice", "Bob", "Charlie", "David"]
	for i in range(len(names)):
	  if len(names[i]) > 4:
	  print(names[i])

c)	names = ["Alice", "Bob", "Charlie", "David"]
	for i in names:
	  if len(i) > 4:
	  print(i)

d)	names = ["Alice", "Bob", "Charlie", "David"]
	for name in range(names):
	  if len(name) > 4:
	  print(name)

2.	You are building a program to analyze a given text string and count the occurrences of a specific word within it. The word to be searched is provided by the user. You decide to use a 'for loop' to iterate over each word in the string and compare it with the given word. Which of the following code snippets correctly implements this functionality?

a)	text = "The quick brown fox jumps over the lazy dog"
	word = input("Enter a word to search: ")
	count = 0
	for char in text:
	  if char == word:
	  count += 1
	print("Occurrences of the word:", count)

b)	text = "The quick brown fox jumps over the lazy dog"
	word = input("Enter a word to search: ")
	count = 0
	for word in text.split():
	  if word == word:
	  count += 1
	print("Occurrences of the word:", count)

c)	text = "The quick brown fox jumps over the lazy dog"
	word = input("Enter a word to search: ")
	count = 0
	for word in text:
	  if word == word:
	  count += 1
	print("Occurrences of the word:", count)

d)	text = "The quick brown fox jumps over the lazy dog"

	word = input("Enter a word to search: ")
	count = 0
	for word in text.split():
	  if word == word:
	  count += 1
	print("Occurrences of the word:", count)

3.	You are developing a program to store and analyze student data. Each student's information includes their name, age, and grade. You decide to use tuples to represent each student's data. Which of the following code snippets correctly defines a tuple for a student named "Alice" who is 16 years old and in 11th class? a) student_tuple = ("Alice", 16, 11) b) student_tuple = ("Alice", (16, 11)) c) student_tuple = (("Alice", 16, 11)) d) student_tuple = ("Alice", 16), 11
4.	You are working on a program that tracks the inventory of an online store. Each item in the inventory has a unique item code as a key and a dictionary of details as its value, including the item name, price, and quantity available. You want to add a new item to the inventory using a dictionary. Which of the following code snippets correctly achieves this?

a)	inventory = {}
	item_code = input("Enter item code: ")
	item_name = input("Enter item name: ")
	item_price = float(input("Enter item price: "))
	item_quantity = int(input("Enter item quantity: "))
	item_details = {
	  "name": item_name,
	  "price": item_price,
	  "quantity": item_quantity
	}
	inventory[item_code] = item_details

b)	inventory = {}
	item_code = input("Enter item code: ")
	item_name = input("Enter item name: ")
	item_price = float(input("Enter item price: "))
	item_quantity = int(input("Enter item quantity: "))
	inventory[item_code] = {
	  "name": item_name,
	  "price": item_price,
	  "quantity": item_quantity
	}

c)	inventory = {}
	item_code = input("Enter item code: ")
	item_name = input("Enter item name: ")
	item_price = float(input("Enter item price: "))
	item_quantity = int(input("Enter item quantity: "))
	item_details = {
	item_name: "name",
	item_price: "price",
	item_quantity: "quantity"
	}
	inventory[item_code] = item_details

d)	inventory = {} item_code = input("Enter item code: ") item_name = input("Enter item name: ") item_price = float(input("Enter item price: ")) item_quantity = int(input("Enter item quantity: ")) item_details = dict(name=item_name, price=item_price, quantity=item_quantity) inventory[item_code] = item_details
5.	You are developing a program that stores information about books in a library. Each book has attributes such as title, author, publication year, and availability status. You decide to use different data types to represent these attributes. Which of the following code snippets correctly demonstrates the usage of appropriate data types for the book attributes?

a)	book = {
	"title": "Python Programming",
	"author": "John Doe",
	"publication_year": "2020",
	"availability": True
	}

b)	book = {
	"title": "Python Programming",
	"author": "John Doe",
	"publication_year": 2020,
	"availability": "Yes"
	}

c)	book = {
	"title": "Python Programming",
	"author": "John Doe",
	"publication_year": 2020,
	"availability": True
	}

d)	book = {
	"title": "Python Programming",
	"author": "John Doe",
	"publication_year": "2020",
	"availability": "Available"
	}

Q.NO	ANSWER
1.	A
2.	D
3.	A
4.	B
5.	C

	FUNCTIONS – CASE BASED QUESTIONS
1.	You are tasked with creating a function that calculates the average of a list of numbers. Which of the following code snippets correctly defines and calls this function?

a)	def calculate_average(numbers):
	  total = sum(numbers)
	  average = total / len(numbers)
	  return average
	
	result = calculate_average([1, 2, 3, 4, 5])

b)	def calculate_average(numbers):
	  total = 0
	  for num in numbers:
	  total += num
	  average = total / len(numbers)
	  return average
	
	result = calculate_average(1, 2, 3, 4, 5)

c)	def calculate_average(*numbers):
	  total = 0
	  for num in numbers:
	  total += num
	  average = total / len(numbers)
	  return average
	
	result = calculate_average([1, 2, 3, 4, 5])

d)	def calculate_average(numbers):
	  total = 0
	  for num in range(len(numbers)):
	  total += numbers[num]
	  average = total / len(numbers)
	  return average
	
	result = calculate_average((1, 2, 3, 4, 5))

2.	You want to create a function that checks if a given string is a palindrome (reads the same forwards and backwards). Which of the following code snippets correctly implements this function?

a)	def is_palindrome(string):
	reversed_string = string[::-1]
	  if string == reversed_string:
	  return True
	  else:
	  return False
	
	result = is_palindrome("racecar")

b)	def is_palindrome(string): reversed_string = ""

	for char in string:
	reversed_string = char + reversed_string
	if string == reversed_string:
	return True
	else:
	return False
	
	result = is_palindrome("hello")

c)	def is_palindrome(string):
	if string == string.reverse():
	return True
	else:
	return False
	
	result = is_palindrome("level")

d)	def is_palindrome(string):
	if string == string[::-1]:
	return True
	else:
	return False
	
	result = is_palindrome("python")

3.	You are developing a program that requires a function to calculate the factorial of a given number. Which of the following code snippets correctly defines and calls this function?

a)	def factorial(n):
	if n == 0:
	return 1
	else:
	return n * factorial(n - 1)
	
	result = factorial(5)

b)	def factorial(n):
	result = 1
	for i in range(1, n + 1):
	result *= i
	return result
	
	result = factorial(5)

c)	def factorial(n):
	result = n
	while n > 1:
	n -= 1
	result *= n
	return result
	
	result = factorial(5)

d)	def factorial(n):
	result = 1
	while n > 0:

	result *= n n -= 1 return result result = factorial(5)
4.	You want to create a function that accepts a list of numbers and returns a new list containing only the even numbers from the original list. Which of the following code snippets correctly implements this function?

a)	def get_even_numbers(numbers):
	even_numbers = []
	for num in numbers:
	if num % 2 == 0:
	even_numbers.append(num)
	return even_numbers
	
	reult = get_even_numbers([1, 2, 3, 4, 5])

b)	def get_even_numbers(numbers):
	even_numbers = []
	for i in range(len(numbers)):
	if numbers[i] % 2 == 0:
	even_numbers.append(numbers[i])
	return even_numbers
	
	result = get_even_numbers([1, 2, 3, 4, 5])

c)	def get_even_numbers(numbers):
	even_numbers = []
	for num in range(numbers):
	if num % 2 == 0:
	even_numbers.append(num)
	return even_numbers
	
	result = get_even_numbers([1, 2, 3, 4, 5])

d)	def get_even_numbers(numbers):
	even_numbers = []
	for num in numbers:
	if numbers % 2 == 0:
	even_numbers.append(num)
	return even_numbers
	
	result = get_even_numbers([1, 2, 3, 4, 5])

5.	You are creating a program that calculates the area of different shapes. You decide to create separate functions for each shape. Which of the following code snippets correctly defines and calls a function to calculate the area of a rectangle?
a)	def calculate_rectangle_area(length, width): area = length * width return area result = calculate_rectangle_area(5, 6)

b)	def calculate_rectangle_area(side):
	  area = side * side
	  return area
	
	result = calculate_rectangle_area(5)

c)	def calculate_rectangle_area(length, width):
	  area = length + width
	  return area
	
	result = calculate_rectangle_area(5, 6)

d)	def calculate_rectangle_area(side):
	  area = side + side
	  return area
	
	result = calculate_rectangle_area(5)

6	Anil, a student of class 12th, is learning Pythonfunctions . During examination, he has been assigned an incomplete python code (shown below) for finding max of given two numbers. Help him to complete the following code
	
	defmax_of_two(x, y):
	  if _____:
	  return x
	  else:
	  return y
	
	a) X<Y b) X==Y c) X>Y d) X!=Y

7	Ravi, is a student of class 12th, is learning Python functions . During examination, he has been assigned an incomplete python code (shown below) for finding Sum of numbers in the given list. Help him to complete the following code
	
	def sum(numbers):
	  total = 0
	  for x in numbers:
	_____
	
	  return total
	print(sum((8, 2, 3, 0, 7)))
	
	a) total=+x b) total =x c) x=total d) total+=x

8	Mahesh, is a student of class 12th, is learning Python functions . During examination, he has been assigned an incomplete python code (shown below) for searching element in the given list. Help him to complete the following code
	
	defSearch(Nums, ele):
	if ele in Nums :
	  return _____
	  else:
	  return False
	print(Srearch(Nums,20))
	
	a) Ture b) False c) Present d) Not Found

9	Tarun, is a student of class 12th, is learning Python functions . During examination, he has been assigned an incomplete python code (shown below) to check given string is a palindrome or not. Help him to complete the following code
	
	defPalindrome(Name):
	
	if _____:
	return True
	else:
	return False
	
	Name b) Name == Name[::-1] c) True d) Name==Name[::1]

10	Ravi, is a student of class 12th, is learning Python functions . During examination, he has been assigned an incomplete python code (shown below) for finding Factorial of the given number. Help him to complete the following code
	
	def sum(N):
	f = 1
	for x in _____:
	f = f * x
	return f
	
	print(fact(5))
	
	a) N b) range(N) c) range(1,N) d) range(1,N+1)

FUNCTIONS CASE BASED QUESTIONS	
QNO	ANSWER
1.	A
2.	A
3.	A
4.	A
5.	A
6	C
7	D
8	A
9	B
10	D

	EXCEPTION HANDLING – CASE BASED QUESTIONS
1	You are building a calculator program that takes user input for two numbers and performs arithmetic operations. Implement exception handling to handle cases where the user enters invalid input. Question: How would you handle the scenario where the user enters a non-numeric value instead of a number? a) Use a try-except block to catch a `ValueError` and display an error message to the user. b) Use a try-except block to catch a `TypeError` and display an error message to the user. c) Use a try-except block to catch an `IndexError` and display an error message to the user. d) Use a try-except block to catch a `SyntaxError` and display an error message to the user.
2	You are writing a program that reads data from a file and performs some calculations. Implement exception handling to handle cases where the file does not exist. Question: How would you handle the scenario where the file specified by the user does not exist? a) Use a try-except block to catch a `FileNotFoundError` and display an error message. b) Use a try-except block to catch a `ValueError` and display an error message. c) Use a try-except block to catch a `TypeError` and display an error message. d) Use a try-except block to catch an `IndexError` and display an error message.
3	You are working on a program that receives network data. Implement exception handling to handle cases where the network connection is lost. Question: How would you handle the scenario where the network connection is lost while receiving data? a) Use a try-except block to catch a `ConnectionError` and attempt to reconnect. b) Use a try-except block to catch a `ValueError` and display an error message. c) Use a try-except block to catch a `TypeError` and display an error message. d) Use a try-except block to catch an `IndexError` and display an error message.
4	You are building a web scraping program that extracts data from a website. Implement exception handling to handle cases where the website is down or unreachable. Question: How would you handle the scenario where the website is down or unreachable? a) Use a try-except block to catch a `ConnectionError` and display an error message. b) Use a try-except block to catch a `FileNotFoundError` and display an error message. c) Use a try-except block to catch a `TypeError` and display an error message. d) Use a try-except block to catch a `ValueError` and display an error message.
5	You are writing a program that performs database operations. Implement exception handling to handle cases where the database connection fails. Question: How would you handle the scenario where the database connection fails? a) Use a try-except block to catch a `DatabaseError` and display an error message. b) Use a try-except block to catch a `NameError` and display an error message. c) Use a try-except block to catch a `SyntaxError` and display an error message. d) Use a try-except block to catch a `ValueError` and display an error message.
6	The code shown below will result in an error if the input value is entered as -5. State whether this statement is true or false. assert False, 'Spanish' a) Trueb) False

7	What is the output of the code shown below? x=10 y=8 assert x>y, 'X too small' a) Assertion Error b) 10 8 c) No output d) 108
8	What is the output of the code shown below? #generator def f(x): yield x+1 g=f(8) print(next(g)) a) 8 b) 9 c) 7 d) Error

9	What is the output of the code shown below?
	def f(x):
	  yield x+1
	  print("test")
	  yield x+2
	g=f(9)
	a) Error b) test
	c) test and 10 and 12 d) No output

10	What is the output of the code shown below?
	def f(x):
	  yield x+1
	  print("test")
	  yield x+2
	g=f(10)
	print(next(g))
	print(next(g))
	a) No output b) 11 and test and 12
	c) 11 and test d) 11

EXCEPTION HANDLING - CASE BASED QUESTIONS	
QNO	ANSWER
1.	A
2.	A
3.	A
4.	A
5.	A
6	A
7	C
8	B
9	D
10	B

	TEXT FILE HANDLING – CASE BASED QUESTIONS
1.	Consider the following scenario: You need to read the contents of a text file into a list in Python, excluding any empty lines. Which approach should you take? 1. A) Read the file using `file.read()` and then remove empty lines using a loop. 2. B) Use the `file.readlines()` method to read the file into a list and remove empty lines using a loop. 3. C) Use the `file.read().splitlines()` method to read the file into a list, which automatically excludes empty lines. 4. D) Read the file using `file.read()` and then use the `filter()` function to remove empty lines from the resulting list.
2.	Consider the following scenario: You are working on a project that involves reading a text file with a large number of lines. You want to process the file line by line efficiently, without loading the entire file into memory. Which approach should you use? 1. A) Use the `file.read()` method to read the entire file and then iterate over the lines. 2. B) Use the `file.readlines()` method to read all the lines at once and then iterate over them. 3. C) Iterate over the file object directly without using any specific method for reading the lines. 4. D) Use the `file.readline()` method inside a loop to read and process each line sequentially.
3.	Consider the following scenario: You need to write a list of strings to a text file, where each string should be written as a separate line. Which approach is recommended for achieving this? 1. A) Use the `file.write()` method to write each string, followed by a line break character. 2. B) Concatenate the strings into a single string with line break characters and then use the `file.write()` method. 3. C) Use the `file.writelines()` method, passing the list of strings as an argument, without any additional characters. 4. D) Iterate over the list of strings and use the `file.write()` method for each string, followed by a line break character.
4.	Which of the following code snippets correctly demonstrates the usage of a `with` statement to automatically close a file after reading its content?
	a) file = open("data.txt", "r") content = file.read() print(content) file.close() b) with open("data.txt", "r") as file: content = file.read() print(content) c) with open("data.txt", "r") as file content = file.read() print(content) d) file = open("data.txt", "r") content = file.read() print(content) close(file)
5.	Which of the following code snippets correctly opens a text file named "log.txt" in append mode and appends the string "Error: File not found!" to it? a) file = open("log.txt", "a") file.write("Error: File not found!")

```
file.close()

b) file = open("log.txt", "w")
file.write("Error: File not found!")
file.close()

c) file = open("log.txt", "r")
file.write("Error: File not found!")
file.close()

d) file = open("log.txt", "append")
file.write("Error: File not found!")
file.close()
```

TEXT FILES - CASE BASED QUESTIONS	
QNO	ANSWER
1.	C
2.	C
3.	C
4.	B
5.	A

BINARY FILE HANDLING – CASE BASED QUESTIONS

1. Ravi is writing python code to complete the task:
A binary file "STUDENT.DAT" has structure (*admission_number, Name, Percentage).* Write a function **CountRec()** in python that would read contents of the file "STUDENT.DAT" and display the details of those students whose percentage is above 75. Also display number of students scoring above 75%.

Help Ravi to complete the task by filling blanks with appropriate code.

```
import   pickle
def  ____________________                          # statement 1
fobj = open("__________", "___")                 # statement 2
num = 0
      try:
            while True:
                  rec=_________.load(fobj)              # statement 3
                  if _____ > 75:                          # statement 4
                        print(rec[0], rec[1], rec[2])
num = num +1
      _______ :                                          # statement 5
fobj.close()
      return num
```

Statement1

	Countrec():
	Statement 2 “STUDENT.DAT” , “wb”
	Statement 3: fobj
	Statement 4 rec[2]
	Statement 5 except EOFError

2.	Mr. Kulveer loves programming. He joined an institute for learning. He is learning python. He learned all the python concepts like strings, lists, tuple , dictionaries etc. but he wants to learn file handling in python. He is trying to learn binary file handling. His teacher gave him partial code to write and read data from employee.dat having structure empno, name, salary. Help Kulveer to complete the code:
	
	_____ # statement 1
	def addrecords():
	fw= _____ #statement 2
	dict={}
	ch=’y’
	while ch==’y’:
	eno=int(input(“enter employee number”))
	nm= input(“enter employee name”)
	sal=int(input(“enter employee salary”))
	dict={‘empno’:eno,’name’:nm,’salary’:sal}
	_____ # statement 3
	ch=input(“add more record”)
	fw.close()
	# function to diplay records
	def display():
	dict={}
	fr= _____ # statement 4
	dict=_____ # statement 5
	fr.close()
	print(“data :”,dict)

	Help Kulveer to import the module to perform binary file operation in statement 1. a) csv b) random c) pickle d) file
	Which statement is used from the following for statement 2 to open the binary file in write mode? a) open(“employee.dat”,’w’) b) open(“employee.dat”,’wb’) c) open(“employee.dat”,’w+’) d) open(“employee.dat”,’r’)
	Which statement is used from the following for statement 3 to write dictionary data created in above code, namely dict, is written in binary file employee.dat file? a) pickle.dump(dict,fw)

	b) pickle.write(dict,fw) c) pickle.save(dict,fw) d) pickle.store(dict)
	Which statement is used from the following for statement 4 to open the binary file in read mode? a) open("employee.dat",'r') b) open("employee.dat",'r+') c) open("employee.dat",'a') d) open("employee.dat",'rb')
	Compelete statement 5 to read data in dictionary namely dict from the opened binary file? a) dict=pk.read(fr) b) dict=pickle.load(fr) c) pickle.load(dict,fr) d) none of these

3.	Mr. Kulveer has given the following code to modify the records of employees from employee.dat used in above code. He has to increase Rs. 2000 in the salary of those who are getting less than 15000. Mr. Kulveer has to find the records and change the salary in place. His teacher gave him partial code. Help him to complete the code.
	
	import pickle as pk
	found=False
	emp={}
	fin = _____ #1 statement : open file both in read write mode
	# read from file
	try:
	while true:
	pos= _____ #2 store file pointer position before reading record
	emp=_____ #3 to read the record in emp dictionary
	if emp['salary']<15000:
	emp['salary']+=10000
	_____ #4 place file pointer at exact location of record
	pickle.dump(emp,fin)
	found=True
	except EOFError:
	if found==False:
	print("record not found")
	else:
	print("successfully updated")
	fin.close()

	In #1 statement open the file in read and write mode. Which statement is used out of the followings? a) open("employee.dat",'rb+') b) open("employee.dat",'r+') c) open("employee.dat",'a') d) open("employee.dat",'rb')
	Choose the appropriate statement to complete #2 statement to store file pointer position before reading record. a) pk.seek(pos) b) fin.tell() c) pk.position()

	d) pk.tell()
	Choose the appropriate statement to complete #3 statement to read record in emp dictionary. a) pk.read(fin) b) pickle.load(fin,emp) c) pk.dump(emp) d) pk.load(fin)
	Choose the appropriate statement to complete #4 statement to place file pointer at exact location of record a) fin.seek(pos) b) pos=fin.seek() c) fin.position() d) none of the above
4.	**Ms. Seema is working on a binary file and wants to write data from a list to a binary file. Consider list object as l1, binary file suman_list.dat, and file object as f.** **(i) Which of the following can be the correct statement for her?** a) f = open("suman_list","wb"); pickle.dump(l1,f) b) f = open("suman_list","rb"); l1=pickle.dump(f) c) f = open("suman_list","wb"); pickle.load(l1,f) d) f = open("suman_list","rb"); l1=pickle.load(f)
	(ii) Which option will be correct for reading file for seema? a) f = open(„suman_list“,“rb“) b) f = open(„suman_list“,“r“) c) f = open(„suman_list“,“r+“) d) f = open(„suman_list“,“ab“)
	(iii) In which of the file mode existing data will be intact in binary file? a) a b) ab c) w d) wb
	(iv) Which one of the following is correct statement? a) import – pickle b) pickle import c) import pickle d) All of the above
	(v) What are the binary files used for? a) It is used to store data in the form of bytes. b) To store data c) To look folder good d) None of these
5.	**A Binary file Stock.dat has a structure [pno,pname,qty,price].A user defined function Createfile() to input data for 3 records and add to stock.dat .There are some blanks help in filling the gaps in the code:** Incomplete Code :

	Import _____ # Statement 1
	def createfile():
	File=open("d:\\Stock.dat","____") #Statement 2
	pno=input("Enter product no:")
	pname= input("Enter product name:")
	qty= input("Enter product quantity:")
	price= input("Enter product price:")
	record=[pno,pname,qty,price]
	_____ # Statement 3
	Print("Record inserted")
	File.close()
	createfile()

	(i) Identify the suitable code for blank space in line marked as Statement-1. a) csv b) CSV c) pickle d) PICKLE
	(ii) Identify the suitable code for blank space in line marked as Statement-2. a) wb b) ab c) w d) a
	(iii) select correct statement to write data into file for Statement-3. a) pickle.dump(record,file) b) pickle.dump(record) c) pickle.dump(file,record) d) pickle.load(record,file)
	(iv) Which method is used for object deserialization ? a) Pickling b) Unpickling c) All of the above d) None of the above
	(v)What is the last action that must be performed on a file? a) save b) close c) end d) write

BINARY FILES - CASE BASED QUESTIONS	
QNO	ANSWER
1.	
	Statement1 Countrec():
	Statement 2 “STUDENT.DAT” , “wb”
	Statement 3: fobj
	Statement 4 rec[2]
	Statement 5 except EOFError
2.	
i.	C
ii.	B
iii.	A
iv.	D
v.	B
3.	
i.	A
ii.	B
iii.	D
iv.	B
4.	
i.	A
ii.	A
iii.	B
iv.	C
v.	A
5.	
i.	C
ii.	B
iii.	A
iv.	B
v.	B

CSV FILE HANDLING – CASE BASED QUESTIONS

1. The code given below inserts following record in to a table EMPLOYEE

EMPNO – Integer
ENAME – string
SALARY - Integer
BONUS - Integer
DEPTID – string

Write the following missing statements to complete the code

```
import _______________                  # Statement1
mydb=mysql.connector.connect(host="localhost",user="root",passwd='root',database="class12")
mycursor= _______________              # Statement 2
mycursor.execute("INSERT INTO EMPLOYEE VALUES(114,'BP Singh',56400,800,'D01')")
_____________________                  # Statement 3
print(mycursor.rowcount, "Record inserted")
```

2. The Code given below is deleting a record from table EMPLOYEE
Fill in the blanks to complete the code

```
import mysql.connector
mydb=_________________(host="localhost",user="root",passwd='root',database="class12")
# statement 1
mycursor=mydb.cursor()
mycursor._____________("DELETE FROM EMPLOYEE WHERE EMPNO=114")      #
statement 2
_________________  # statement 3
```

3. Mr. Rohan has written the given code in python that defines and calls the following user defined functions.
Addrecord() – To add a student record to a CSV file **Student.csv** where each record contains a list of field values ADMNO, NAME, CLASS (reads values from keyboard)
Count() – To count the number of records present in file **Student.csv**

Help him to fill in the blanks to complete the program

```
import _______________   # statement 1
def Addrecord():
   f=open("Student.csv","a",newline="")
wr= _______________                    # statement 2
admno=int(input("Ente admission no: "))
   name=input("Enter name :: ")
   Class=int(input("Enter Class: "))
   l=[admno,name,Class]
wr.
f.close()

def count():
   f=open("Student.csv","r",newline="")
   data=csv.reader(f)
   d=list(data)
   print(len(d))
f.close()

Addrecord()
count()
```

4. The program given below is to create a CSV file **Employee.csv** by suppressing EOL translation. Each employee record contains a list of fields ENAME, DESIGNATION, SALARY
The writerows() method is adding 5 records to the file.

```
import csv
f=open( _____ )   # statement 1
wr=csv. _____              # statement 2
empdata=[["Rahul","Assistant",34000],
        ["Abhinav","Manager",67000],
        ["John","Clerk",23000],
        ["Vinod","Accountant",32000],
        ["Mahitha","Clerk",28000]]
wr.
f.close()
```

5. **The code given below is searching and printing record in a file named "result10.csv". each record contains details in the order [rollno, name, result].**
Fill in the blanks so that the program is correct and complete.

```
import   _______          # statement 1
f = open("result10.csv",'r')
csv_reader= _____________   #statement 2
rollno = input("Enter Roll Number to be searched: ")
for row in _________:          #statement 3
   if(row[0]==rollno):
      print(row)
f.close()
```

6 Rohit, a student of class 12th, is learning CSV File Module in Python. During examination, he has been assigned an incomplete python code (shown below) to create a CSV File 'Student.csv' (content shown below). Help him in completing the code which creates the desired CSV File.

CSV File

```
1,AKSHAY,XII,A
2,ABHISHEK,XII,A
3,ARVIND,XII,A
4,RAVI,XII,A
5,ASHISH,XII,A
```

Incomplete Code

```
import_____                                    #Statement-1
fh = open(_____, _____, newline='')            #Statement-2
stuwriter = csv._____                          #Statement-3
data = []
header = ['ROLL_NO', 'NAME', 'CLASS', 'SECTION']
data.append(header)
for i in range(5):
        roll_no = int(input("Enter Roll Number : "))
        name = input("Enter Name : ")
        Class = input("Enter Class : ")
        section = input("Enter Section : ")
        rec = [_____]                          #Statement-4
        data.append(rec)
stuwriter. _____ (data)                        #Statement-5
fh.close()
```

i) Identify the suitable code for blank space in line marked as Statement-1.
a) csv file b) CSV c) csv d) Csv
Answer : c) csv

ii) Identify the missing code for blank space in line marked as Statement-2?
a) "School.csv","w" b) "Student.csv","w" c) "Student.csv","r" d) "School.csv","r"
Answer : b) "Student.csv","w"

iii) Choose the function name (with argument) that should be used in the blank space of line marked as Statement-3
a) reader(fh) b) reader(MyFile) c) writer(fh) d) writer(MyFile)
Answer : c) writer(fh)

iv) Identify the suitable code for blank space in line marked as Statement-4.
a) 'ROLL_NO', 'NAME', 'CLASS', 'SECTION' b) ROLL_NO, NAME, CLASS, SECTION
c) 'roll_no','name','Class','section' d) roll_no,name,Class,sectionc) co.connect()
Answer : d) roll_no,name,Class,section

v) Choose the function name that should be used in the blank space of line marked as Statement-5 to create the desired CSV File?
a) dump() b) load() c) writerows() d) writerow()
Answer : c) writerows()

7 **Aman is working in an IT company writing a program to add record in an already existing CSV file "stud.csv". He has written the following code. As a friend of Aman, help him to complete the code given below.**

```
_____                                   #Statement-1
fn = open(_____, _____, newline='')     #Statement-2
sdata = csv._____                       #Statement-3
temp = [ ]
sid = int(input("Enter Student Id : "))
sname = input("Enter Student Name : ")
class = input("Enter Class : ")
record = [ _____ ]                      #Statement-4
temp._____ (record)                     #Statement-5
sdata. dump ( _____ )                   #Statement-6
fn.close()
```

1. Fill in the blank for statement1:

(a) load CSV
(b) read csv
(c) import csv
(d) import CSV

Ans. (c) import csv

2.Fill in the blank for statement2:

(a) "stud .csv", "wb"
(b) "stud .csv", "a"
(c) "stud .csv", "w"

	(d) "stud .cvs", "a" Ans. (b) “stud .csv”, “a” 3.Fill in the blank for statement3: (a) writer(fn) (b) reader(fn) (c) readline(fn) (d) writeline(fn) Ans. (a) writer(fn) 4.Fill in the blank for statement4: (a) Sid, Sname, Class (b) sid, sname, class (c) SID,SNAME,CLASS (d) “sid”, ”sname”, "class” Ans.(d) “sid”, ”sname”, “class” 5.Fill in the blank for statement5: (a) add (b) writes (c) append (d) dump Ans. (c) append 6.Fill in the blank for statement6: (a) record (b) temp (c) fn (d) csv Ans. (b) temp

8	Srishti is a class 12 Computer Science student. She has been assigned an incomplete python code (shown below) to create a CSV file ‘book.csv’ and display the file content (as shown below). Help her to complete the following code.
	CSV File
	
	bookid, subject, class
	b1, Hindi, VI
	b2, Science, VII
	b3, Math, VI
	import_____ #Statement-1
	fn = open(_____, _____) #Statement-2
	fno = csv._____ #Statement-3
	fno.writerow(["bookid","subject", "class"])
	fno.writerow(["b1", "Hindi", "VI"])

```
fno.writerow(["b2", "Science", "VII"])
fno.writerow(["b3", "Math", "VI"])
fn._____                                #Statement-4
_____ open("book.csv","r") as fn:       #Statement-5
rd=csv._____                            #Statement-6
for rec in rd:
    print(rec)
fn.close()
```

1. Choose the correct code for Statement1.

a. csv
b. CSV
c. cvs
d. csv file

Ans. a. csv

2. Choose the correct code for Statement2.

a. "book.csv", "r"
b. "book.csv", "w"
c. "book.csv file", "w"
d. "book", "w"

Ans. b. “book.csv”, “w”

3. Choose the correct code for Statement3.

a. reader(fn)
b. read(book)
c. writer(fn)
d. write(fn)

Ans. c. writer(fn)

4. Choose the correct code for Statement4.

a. dump( )
b. close( )
c. exit( )
d. end( )

Ans. b. close( )

5. Choose the correct code for Statement5.

a. fn =

	b. with c. With d. as Ans. b. with 6.Choose the correct code for Statement6. a. readlines(fn) b. read(fn) c. readrows() d. reader(fn) Ans. d. reader(fn)

9	Amit, a student of class 12th is trying to write a program to search the record from "data.csv" according to the admission number input from the user. Structure of record saved in "data.csv" is Adm_no, Name, Class, Section, Marks. He has written the partial code and has missed out certain statements, You as an expert
	of Python have to provide the answers of missing statements based on the following code of Amit.
	Ans.
	
	import _____ #Statement1
	f = open(_____) #Statement2
	d=csv._____(f) #Statement3
	next(f) #To Skip Header Row
	k = 0
	adm = int(input("Enter admission number"))
	for row in d:
	if int(row[0])_____adm: #Statement4
	print("Adm no = ", row[0])
	print("Name = ", row[_____]) #Statement5
	print("Class = ", row[2])
	print("Section = ", row[3])
	print("Marks = ", row[4])
	break
	_____ : #Statement6
	print("Record Not Found")
	
	1. Choose the correct module for Statement1.
	
	a. CSV
	b. Csv
	c. Picke
	d. csv
	Ans. d. csv
	
	2. Choose the correct code for Statement2
	
	a. "data.csv", "r"
	b. "data.csv", "w"

c. "data.csv", "a"
d. "data.csv", "wb"
Ans. a. “data.csv”, “r”

3. Choose the correct function for Statement3

a. Reader
b. reader( )
c. reader
d. read

Ans. c. reader

4. Choose the correct operator for Statement4

a. >
b. >=
c. ==
d. !=

Ans. c. ==

5. Choose the correct index for Statement5.

a. 0
b. 1
c. 2
d. 3

Ans. b. 1

6. Choose the correct selection statement for Statement6.

a. if
b. else
c. elif
d. if-

Ans. b. else

CSV FILES - CASE BASED QUESTIONS	
QNO	ANSWER
1.	
	Statement 1: mysql.connector **Statement 2:** mydb.cursor() **Statement 3:** mydb.commit()
2.	
	Statement 1: mysql.connector.connect **Statement 2:** execute **Statement 3:** mydb.commit()
3.	
	Statement 1: csv **Statement 2**: csv.writer(f) **Statement 3:** writerow(l)
4.	
	Statement 1: "Employee.csv","w",newline="" **Statement 2:** writer(f) **Statement 3:** writerows(empdata)
5.	
	Statement 1: csv **Statement 2:** csv.reader(f) **Statement 3:** csv_reader

DATABASE MANAGEMENT SYSTEMS - CASE STUDY QUESTIONS:

Q1.) Study the following table(s)

Courier

CNO	CRec	CSen	Amount	CDat	City
159	Vicky	Jack	250	01-Jan-2018	Los Angeles
245	Sam	Kate	220	11-Feb-2019	Paris
358	Alex	Sam	315	30-Apr-2018	London
468	Louis	Simmy	160	01-Mar-2018	Los Angeles
576	Terry	Jane	190	01-Aug-2019	Mexico
688	Lima	Roger	200	03-Nov-2019	Mexico
790	Rosy	Richard	200	21-Jul-2019	Los Angeles
894	Luke	Richard	325	17-May-2018	London
940	Elizabeth	Nicole	150	15-Jan-2019	Paris
999	Nicolas	Longmen	100	10-Jul-2019	Paris

1.Write the queries of the following:

i. To display crec, cdate and city of all the couriers in decreasing order or amount

ii.To view the number of couriers with amount more than 200.

iii.To view total amount for each city from the table courier

2. Write the output of the following:

iv. Select cno, crec, from courier where city like ‘P%’;

v.Select count(cno) from courier where csen like ‘R%’;

vi.Select max(amount). Min(amount) from courier;

Q2) Write SQL commands for the queries (i) to (iv) based on the tables DRESS and MATERIAL.

DRESS

DCODE	DESCRIPTION	PRICE	MCODE	LAUNCHDATE
10001	FORMAL SHIRT	1250	M001	12–JAN–08
10020	FROCK	750	M004	09–SEP–07
10012	INFORMAL SHIRT	1450	M002	06–JUN–08
10019	EVENING GOWN	850	M003	06–JUN–08
10090	TULIP SKIRT	850	M002	31–MAR–07
10023	PENCIL SKIRT	1250	M003	19–DEC–08
10089	SLACKS	850	M003	20–OCT–08
10007	FORMAL PANT	1450	M001	09–MAR–08
10009	INFORMAL PANT	1400	M002	20–OCT–08
10024	BABY TOP	650	M003	07–APR–08

MATERIAL

MCODE	TYPE
M001	TERELENE
M002	POLYESTER
M003	SILK
M004	COTTON

(i) To display DCODE and DESCRIPTION of an each dress in ascending order of DCODE.

(ii) To display the details of all the dresses which have LAUNCHDATE in between 05–DEC–07 and 20–JUN–08 (inclusive of both the dates).

(iii) To display the average PRICE of all the dresses which are made up of material with MCODE as M003.

(iv) To display material wise highest and lowest price of dresses from DRESS table. (Display MCODE of each dress along with highest and lowest price)

Q3) Write the SQL command for the following on the basis of given table.

Table : SPORTS

StudentNo	Class	Name	Game1	Grade1	Game2	Grade2
10	7	Sammer	Cricket	B	Swimming	A
11	8	Sujit	Tennis	A	Skating	C
12	7	Kamal	Swimming	B	Football	B
13	7	Venna	Tennis	C	Tennis	A
14	9	Archana	Basketball	A	Cricket	A
15	10	Arpit	Cricket	A	Athletics	C

i)Display the names of the students who have grade 'A' in either Game 1 or Game 2 or both.

ii)Display the number of students having the GRADE1 as 'A' in Game1.

iii)Display the names of students who have same game for both Game1 and Game2.

iv)Display the games taken by the students whose name starts with 'A'

v) Give the output of the following sql statements as per table given above.

i) SELECT COUNT(*) FROM SPORTS.

ii) SELECT DISTINCT Class FROM SPORTS.

iii) SELECT MAX(Class) FROM STUDENT;

vi) SELECT COUNT(*) FROM SPORTS GROUP BY Game1;

Q4) The given program is used to connect python with MySQL and show all the data present in the table "stmaster" from the database "oraclenk". You are required to complete the statements so that the code can be executed properly.

```
import _____.connector __ pymysql #STATEMENT1
dbcon=pymysql._____(host="localhost",user="root",_____="sia@1928")
#STATEMENT2
if dbcon.isconnected()==False
   print("Error in establishing connection:")
cur=dbcon._____() #STATEMENT3
query="select * from stmaster"
cur.execute(_____)#STATEMENT4
```

```
resultset=cur.fetchmany(3)
for row in resultset:
    print(row)
dbcon._____()  #STATEMENT5
```

Q5) Consider the following tables EMPLOYEE and DEPARTMENT and answer (a) and (b) parts of this question.

TABLE: EMPLOYEE

TCode	TName	DepCde	Salary	Age	JoinDate
15	Sameer Sharma	123	75000	39	01-Apr-2007
21	Ragvinder K	101	86000	29	11-Nov-2005
3	Rama Gupta	119	52500	43	03-Mar-2010
46	CR Menon	103	67000	38	12-Jul-2004
77	Mohan Kumar	103	63000	55	25-Nov-2000
81	Rajesh Kumar	19	74500	48	11-Dec-2008
8	Sanjeev P	101	92600	54	12-Jan-2009
93	Pragya Jain	123	32000	29	05-Aug-2006

TABLE :DEPARTMENT

DepCde	DepName	DepHead
101	ACCOUNTS	Rajiv Kumar
103	HR	P K Singh
119	IT	Yogesh Kumar
123	RESEARCH	Ajay Dutta

1. **Write SQL commands for the following statements:**

   i) To display all DepName along with the DepCde in descending order of DepCde.
   ii) To display the average age of Employees in DepCde as 103.
   iii) To display the name of DepHead of the Employee named “Sanjeev P”
   iv) To display the details of all employees who has joined before 2007 from EMPLOYEE table.

2. **Give the output of the following SQL queries:**

   i) SELECT COUNT (DISTINCT DepCde) FROM EMPLOYEE;
   ii) SELECT MAX(JoinDate), MIN (JointDate) FROM EMPLOYEE;
   iii) SELECT TName, DepHead FROM EMPLOYEE E, DEPARTMENT D WHERE E.DepCde = D.DepCde;
   iv) SELECT COUNT (*) FROM EMPLOYEE WHERE Salary > 60000 AND Age > 30;

DATABASE MANAGEMENT SYSTEMS - CASE STUDY ANSWERS:

Q1) (i) select crec, cdate, city from courier order by amount desc;
(ii) Select count(cno) from courier where amount>200;
(iii) Select sum(amount) , city from courier group by city ;
(iv)

Cno	Crec
245	Sam
940	Elizabeth
999	Nicolas

v)

Count(Cno)
3

(vi)

Max (amount)	Min(amount)
325	100

Q2) (i) Select DCODE, DESCRIPTION from DRESS order by DCODE DESC

(ii) select * from DRESS where LAUNCHDATE >= 05–DEC–07 and LAUNCHDATE<=20–JUN–08

(iii)Select avg(PRICE) from DRESS where MCODE=M003

(iv)select DESCRIPTION, PRICE, MCODE from DRESS order by PRICE DESC, MCODE ASC)

Q3) i) Select Name from SPORTS where Grade1='A' OR Grade2='A';

ii)Select count(*) from SPORTS group by GAME1 having GRADE1='A';

iii)Select Name from SPORTS where Game1=Game2;

iv)Select Game1,Game2 from SPORTS where Name LIKE 'A%';

v) i)6
ii)4
iii)10
iv)2 2 1 1

Q4)

```
import mysql.connector as pymysql
dbcon=pymysql.connect(host="localhost", user="root", passwd="sia@1928")
if dbcon.isconnected()==False
   print("Error in establishing connection:")
cur=dbcon.cursor()
query="select * from stmaster"
cur.execute(query)
resultset=cur.fetchmany(3)
for row in resultset:
     print(row)
dbcon.close()
```

Q5) **(1)**

I. SELECT DEPNAME, DEPARTMENT.DepCde FROM EMPLOYEE, DEPARTMENT WHERE EMPLOYEE. DepCDE=DEPARTMENT. DepCde Order by DepCde DESC;
II. Select AVG (Age) from EMPLOYEE WHERE DepCde=”103″;
III. SELECT DeptHead FROM DEPARTMENT WHERE Employee. TName=“Sanjeev P” AND EMPLOYEE. DepCde= DEPARTMENT. DepCde;
IV. SELECT * from EMPLOYEE WHERE joinDate<’01-JAN-2007′;

(2) i) COUNT(DISTINCT DepCde)/4

ii) Max (JoinDate) Min (JoinDate)

03 Mar-2010 12-Jul-2004

iii)

TName	**DepHead**
Sameer Sharma	Ajay Dutta
RaguvindraK |	Rajiv Kumar
Rama Gupta	Yogesh Kumar
CR Menon	PK Singh
Rajesh Kumar	Yogesh Kumar
Sanjeev P	Rajiv Kumar
Pragya Jain	Ajay Dutta

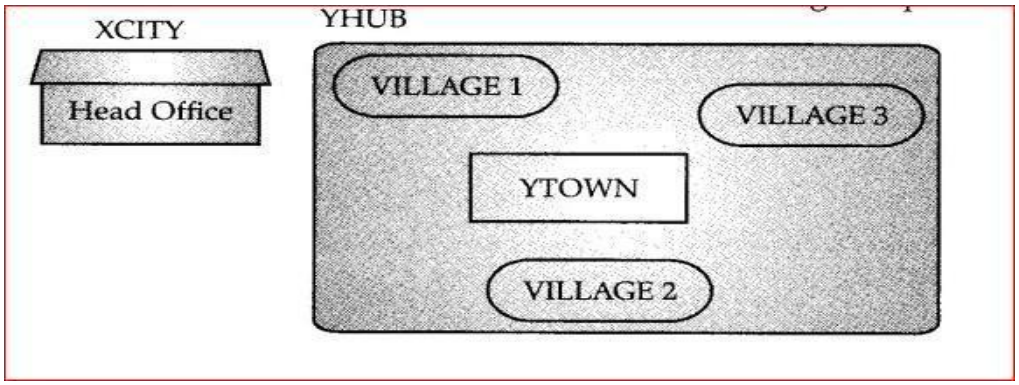
iv) 5

COMPUTER NETWORKS - CASE BASED QUESTIONS:

Q 1.

Innovation Hub India is a knowledge community aimed to uplift the standard of skills and knowledge in the society. It is planning to setup its training centres in multiple towns and villages of India with its head offices in the nearest cities. They have created a model of their network with a city, a town and 3 villages as given.

As a network consultant, you have to suggest the best network related solution for their issues/problems raised in (i) to (v) keeping in mind the distance between various locations and given parameters.



Shortest distance between various locations:

VILLAGE 1 To YTOWN	2 KM
VILLAGE 2 To YTOWN	1.2 KM
VILLAGE 3 To YTOWN	3 KM
VILLAGE 1 To VILLAGE 2	3.5 KM
VILLAGE 1 To VILLAGE 3	4.5 KM
VILLAGE 2 To VILLAGE 3	3.5 KM
CITY Head office to YHUB	30 KM

Number of computers iinstalled at various locations are as follows:

YTOWN	100
VILLAGE 1	10
VILLAGE 2	15
VILLAGE 3	15
CITY OFFICE	5

Note:

* In Villages, there are community centres, in which one room has been given as a training center to this organization to install computers.
* The organization has got financial support from the government and top IT companies.

i.Suggest the most appropriate location of the SERVER in the YHUB (out of the 4 locations), to get the best and effective connectivity. Justify your answer.

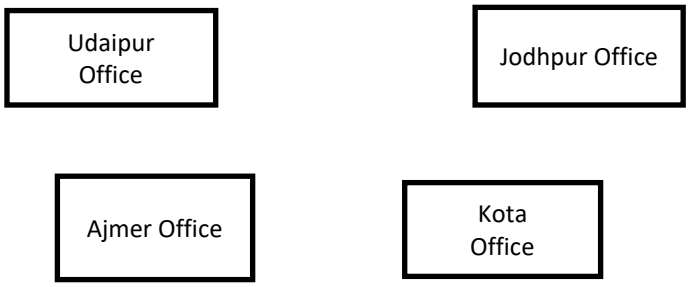
ii. Suggest the best wired medium and draw the cable layout (location to location) to efficiently connect various locations within the YHUB.

iii. Which hardware device will you suggest to connect all the computers within each location of YHUB?

iv. Which server/protocol will be most helpful to conduct live interaction of Experts from Head office and people at YHUB locations?

v. Suggest a device/software and its placement that would provide data security for the entire network of the YHUB.

Q 2. Shyamji Marketing Ltd. has four branches in its campus named Udaipur, Kota, Jodhpur and Ajmer. Shyamji Marketing Ltd. wants to establish the networking between all the four offices. A rough layout of the same is as follows:



Approximate distances between these offices as per network survey team are as follows:

Place From	**Place To**	**Distance**
Udaipur	Jodhpur	30 m
Jodhpur	Kota	40 m
Kota	Ajmer	25 m
Udaipur	Ajmer	150 m
Jodhpur	Ajmer	105 m
Udaipur	Kota	60 m

In continuation of the above, the company experts have planned to install the following number of computers in each of their offices:

Udaipur	40
Jodhpur	80
Kota	200
Ajmer	60

i. Suggest the most suitable place (i.e., Block/Centre) to install the server of this organization

with a suitable reason.

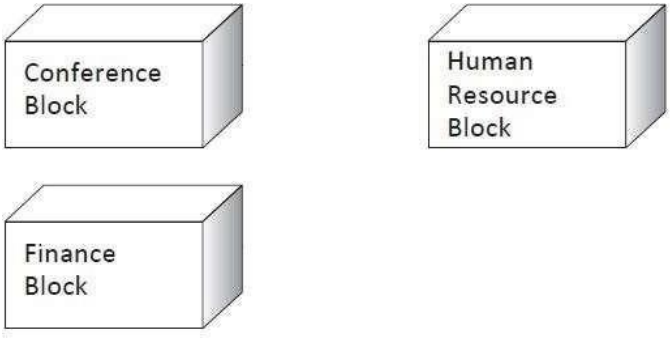
ii. Suggest an ideal layout for connecting these blocks/centre for a wired connectivity.

iii. Which device will you suggest to be placed/installed in each of these offices to efficiently connect all the computers within these offices?

iv. Suggest the placement of a Repeater in the network with justification.

v. The organization is planning to connect its new office in Delhi, which is more than 1250 km current location. Which type of network out of LAN, MAN, or WAN will be formed? Justify your answer.

3. TQ CONSULTANTS is a professional consultancy company. The company is planning to set up new offices in India with its hub at Gurugram. As a network adviser, you have to understand their requirements and suggest to them the best available solutions.



Block-to-Block distance (in Mtrs.):

Block (From)	Block (To)	Distance
Human Resources	Conference	60
Human Resources	Finance	60
Conference	Finance	120

Expected Number of Computers to be installed in each block:

Block	Computers
Human Resources	125
Conference	25
Finance	60

i. What will be the most appropriate block where organization should plan to install their server?

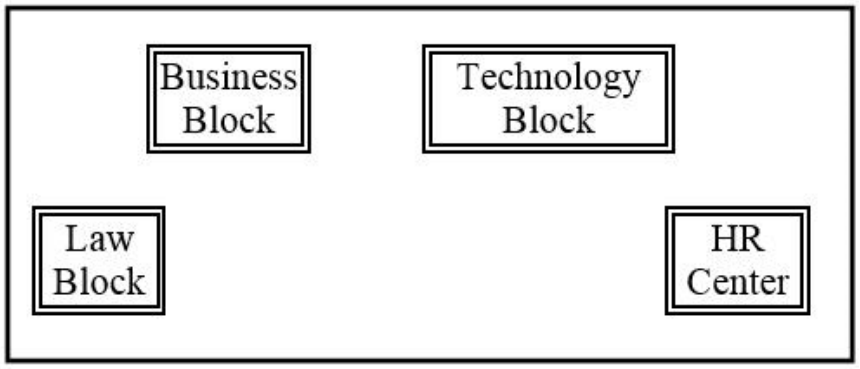
ii.Draw a block-to-block cable layout to connect all the buildings in the most appropriate manner for efficient communication.

iii.What will be the best possible connectivity out of the following to connect the new set-up of offices in Nagpur with its London base office?
(i) Co-axial cable (ii) Satellite Link (iii) Ethernet Cable

iv.Which of the following devices will you suggest to connect each computerin each of the above buildings?
(i)Gateway (ii) Switch (iii) Modem

v.Write names of any two popular OpenSource Software which are used asOperating Systems.

4. WeLearn University is setting up its academic blocks at Raipur and is planning to set up a network. The University has 3 academic blocks and one Human Resource Centre as shown in the diagram below:



Center to Center distances between various blocks/center is as follows:

Law Block to business Block	40m
Law block to Technology Block	80m
Law Block to HR centre	105m
Business Block to technology Block	30m
Business Block to HR Centre	35m
Technology block to HR centre	15m

No. of Computers in each block.

Law Block	15
Technology Block	40
HR centre	115
Business Block	25

i. Suggest the most suitable place (i.e., Block/Centre) to install the server of this University with a suitable reason.

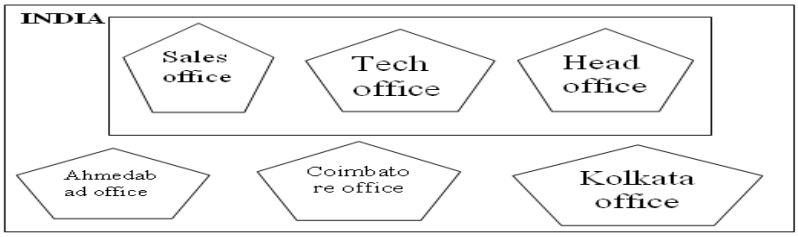
ii. Suggest an ideal layout for connecting these blocks/centre for a wired connectivity.

iii. Which device will you suggest to be placed/installed in each of these blocks/centre to efficiently connect all the computers within these blocks/centre

iv. Suggest the placement of a Repeater in the network with justification.

v. The university is planning to connect its admission office in Delhi, which is more than 1250km from university. Which type of network out of LAN, MAN, or WAN will be formed? Justify your answer

5. Hindustan Connecting World Association is planning to start their offices in four major cities inIndiatoprovideregionalITinfrastructuresupportinthefieldofEducation&Culture.Thecompany has planned to set up their head office in New Delhi in three locations and have namedtheir New Delhi offices as "Sales Office" , "Head Office" and "Tech Office".
The company's regionaloffices are located at "Coimbatore", "Kolkata" and "Ahmedabad". A rough layout of the same is asfollows:



Approximatedistancebetweentheseofficesaspernetworksurveyteamisasfollows:

PlaceFrom	PlaceTo	Distance
HeadOffice	SalesOffice	10KM
HeadOffice	TechOffice	70KM
HeadOffice	KolkataOffice	1291KM
HeadOffice	AhmadabadOffice	790 KM
HeadOffice	CoimbatoreOffice	1952KM

In continuationoftheabove,thecompanyexpertshaveplannedtoinstallthefollowingnumberofcomputersin eachoftheiroffices:

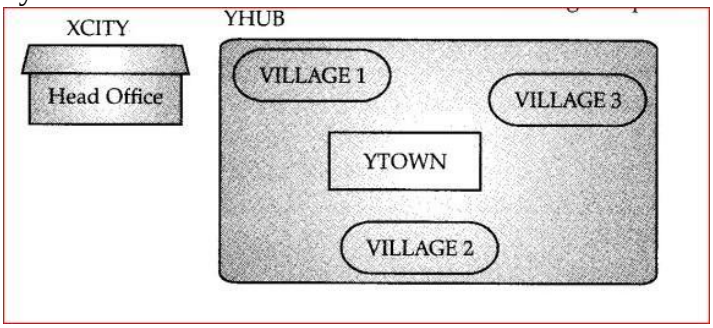
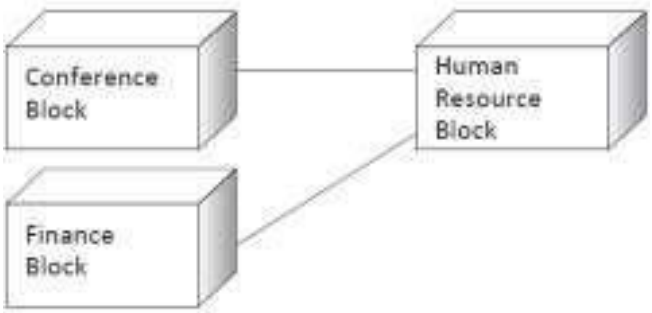
HeadOffice	100
SalesOffice	20
TechOffice	50
KolkataOffice	50
AhmadabadOffice	50
CoimbatoreOffice	50

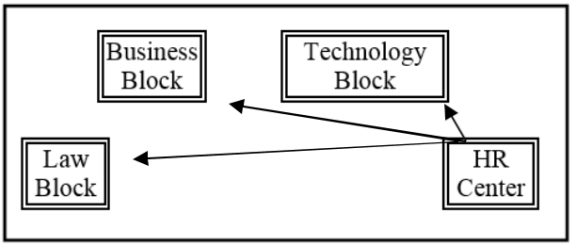
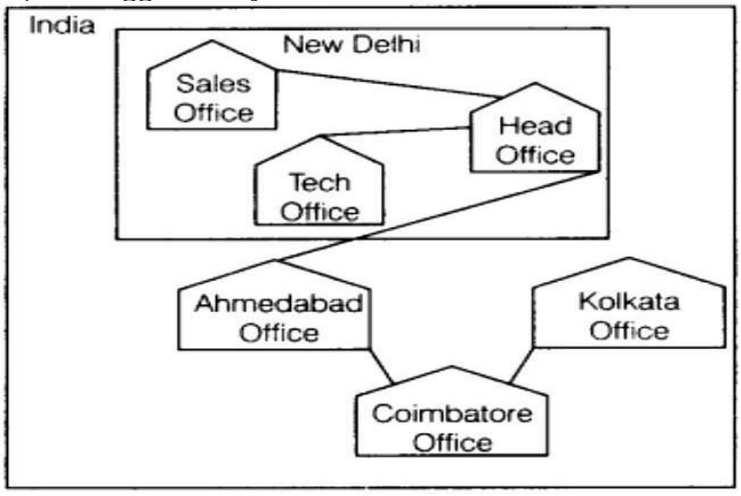
i)Suggest network type(out of LAN,MAN,WAN) for connecting each of the following set of their offices:
a. Head Office and Tech Office
b. Head Office and Coimbatore Office

ii)Which device you will suggest to be produced by the company for connecting all the computers with in each of their offices out of the following devices?
a. Modem
b. Telephone

	c. Switch/Hub iii)Which of the following communication media, will suggest to be procured by the company for connecting their local offices in New Delhi for very effective and fast communication? a. Ethernet Cable b. Optical Fibre c. Telephone Cable iv)Suggest a cable/writing layout for connecting the company's local offices located in New Delhi. v) Suggest the most suitable place (i.e., Block/Office) to install the server of this Company with a suitable reason.

COMPUTER NETWORKS - ANSWERS:

1.	i) YTOWN Justification:-Since it has the maximum number of computers. ii) Optical Fiber Layout:  iii) Switch or Hub iv)Video conferencing or VoIP or any other correct service/protocol v) Firewall - Placed with the Server at YHUB.
2.	i) KOTA, Maximum Computers ii) Any suitable layout iii) Switch iv)Udaipur to Ajmer Block if direct connection is there(largest distance) v)WAN: spread over more than one city
3.	i) Human Resource ii) 

	iii) Satellite Link iv) Switch v) Linux, Ubuntu, Open Solaris or any other Open Source O/s
4.	i) Most suitable place to install the server is HR center, as this center has maximumnumber of computers ii)  iii) Hub / Switch iv) Law Block to HR centre (Repeater may be placed when the distance between 2 buildings is more than 100meter.) v) WAN, as the given distance is more than the range of LAN and MAN.
5.	i) a. The type of network between the Head Office and Tech Office is LAN (Local Area Network). b.The type of network between the Head Office andCoimbatore Office is WAN (Wide Area Network). ii)c. The suitable device for connecting all the computers in each of their offices is switch/hub. iii)b.Optical Fibre iv)The suggested layout for connection is as follows:  v) Head Office