

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(MID SEMESTER EXAMINATION SP2023)

CLASS: I.M.Sc.  
BRANCH: QEDS

SEMESTER: II  
SESSION: SP/2023

SUBJECT: ED119 PROGRAMMING LANGUAGES & DATABASE MGT. SYSTEM

TIME: 02 Hours

FULL MARKS: 25

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 5 marks and total 25 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates
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- Q.1(a) Describe the task performed using the following Python script. [2] CO  
CO1
- ```
i. string = "Py"
   string = string + "thon"
ii. print("Please" +
        " enter your name: ")
iii. team = str(49) + "ers"
iv.  greeting = "H & S"
     n = len(greeting)
v.   string = "Sally"
     ch = string[1]
last = string[len(string) - 1]
```
- Q.1(b) Describe the output of the following Python script. [3] CO1
- ```
for i in range(4) :
    for j in range(i + 1) :
        print("*", end="")
    print()
```
- Q.2(a) Describe the output of the following Python script. [2] CO1
- ```
first = input("Enter your first name: ")
second = input("Enter your significant other's first name: ")

initials = first[0] + "&" + second[0]
print(initials)
```
- Q.2(b) Describe the output of the following Python script. [3] CO1
- ```
i = 0
total = 0
while total < 10 :
    i = i + 1
    total = total + i
    print(i, total)
```
- Q.3(a) Consider this recursive function: [2] CO1
- ```
def mystery(n):
    if n <= 0: return 0
    return n + mystery (n - 1)
What is mystery (4)?
```
- Q.3(b) Suppose you want to build a video site similar to YouTube. Considering disadvantages of keeping data in a file-processing system. Discuss the relevance of each of these points to the storage of actual video data, and to metadata about the video, such as title, the user who uploaded it, tags, and which users viewed it. [3] CO2

PTO

- Q.4(a) Explain the concept of physical data independence and its importance in database systems. [2] CO2
- Q.4(b) Explain the difference between two-tier and three-tier application architectures. Which is better suited for web applications? Why? [3] CO2
- Q.5(a) Describe three levels of data abstractions and their importance. [2] CO2
- Q.5(b) Write a short note on Database Engine and its components. [3] CO2

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