



Brain International School

Vikas Puri, New Delhi

ASSIGNMENT NO. 3

SUBJECT: COMPUTER SCIENCE

CLASS-XII

JULY,2025

Exception Handling

- Q1. Define Exception. How is it different from a syntax error? Give an example of each.
- Q2. Rewrite the following code using exception handling to avoid runtime errors:
- ```
num = int(input("Enter a number: "))
result = 100 / num
print("Result:", result)
```
- Q3. What is the purpose of `finally` block in Python? When is it executed?
- Q4. Name two exceptions that are raised during arithmetic operations in Python.
- Q5. Write a Python program to read two numbers and print their quotient. Use exception handling to handle divide-by-zero and invalid input cases.

### Data Structures – Stack (using list)

- Q6. What is the difference between LIFO and FIFO? Which data structure follows each?
- Q7. Write a user-defined function `Push(Stack, item)` to add an item to a stack implemented using a list.
- Q8. Given the following stack, show the content of the stack after performing each operation:
- ```
Stack = [10, 20, 30]
# Operation 1: Push 40
# Operation 2: Pop
```
- Q9. Define a stack. Mention two applications of stack.
- Q10. Write a user-defined function `POP(Arr)` in Python, which accepts a list `Arr` as a parameter. It performs the pop operation on the stack (implemented using list), removes and returns the topmost element. Also, display an appropriate message if the stack is empty. (3 marks)
- Example:
- ```
If Arr = [5, 10, 15]
Then after calling POP(Arr), it should return 15 and Arr should become [5, 10]
```

## Computer Networks

Q11. What is the difference between HTTP and FTP?

Q12. Define the following terms:

- a) MAC address
- b) IP address

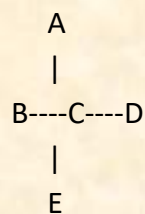
Q13. Expand the following:

- a) Wi-Fi
- b) VoIP

Q14. What is the role of a router in a network?

Q15. Differentiate between guided and unguided transmission media with examples.

Q16. Identify the topology shown below and name two advantages of this topology:



Q17. Give two differences between LAN and WAN.

Q18. What is a firewall? Why is it important in networking?

Q19. State one use each of:

- a) SMTP
- b) POP3

Q20. Explain the concept of DNS. Why is it essential in networking?