50 question & answer on conditional statement

EASY LEVEL (1-20)

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1. Check if a number is even or odd

```
num = int(input("Enter a number: "))
if num % 2 == 0:
    print("Even")
else:
    print("Odd")
```

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2. Check if a person is eligible to vote (age 18 or above)

```
age = int(input("Enter age: "))
if age >= 18:
    print("Eligible to vote")
else:
    print("Not eligible to vote")
```

---

3. Determine if a given year is a leap year or not

```
year = int(input("Enter a year: "))
if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
    print("Leap Year")
else:
    print("Not a Leap Year")
```

---

4. Check if a number is positive, negative, or zero

```
num = int(input("Enter a number: "))
if num > 0:
    print("Positive")
elif num < 0:
    print("Negative")
else:
    print("Zero")
```

---

5. Write a program to find the greatest of two numbers

```
a = int(input("Enter first number: "))
b = int(input("Enter second number: "))
if a > b:
    print("Greatest:", a)
else:
    print("Greatest:", b)
```

---

6. Determine if a number is a multiple of 5

```
num = int(input("Enter a number: "))
if num % 5 == 0:
    print("Multiple of 5")
else:
    print("Not a multiple of 5")
```

---

7. Check if a character is a vowel or consonant

```
char = input("Enter a character: ").lower()
if char in 'aeiou':
    print("Vowel")
else:
    print("Consonant")
```

---

8. Determine if a person is eligible for a senior citizen discount (age 60+)

```
age = int(input("Enter age: "))
if age >= 60:
    print("Eligible for senior citizen discount")
else:
    print("Not eligible")
```

---

9. Check if a number is a single-digit number

```
num = int(input("Enter a number: "))
if 0 <= abs(num) < 10:
    print("Single-digit number")
else:
    print("Not a single-digit number")
```

---

10. Print "Good Morning" if the time is before 12 PM, otherwise print "Good Afternoon"

```
hour = int(input("Enter hour (24-hour format): "))
if hour < 12:
    print("Good Morning")
else:
    print("Good Afternoon")
```

---

11. Check if a string is empty or not

```
s = input("Enter a string: ")
if not s:
    print("String is empty")
else:
    print("String is not empty")
```

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12. Verify if a number is a perfect square

```
import math
num = int(input("Enter a number: "))
if math.isqrt(num) ** 2 == num:
    print("Perfect Square")
else:
    print("Not a perfect square")
```

---

13. Determine if a number is between 1 and 100

```
num = int(input("Enter a number: "))
if 1 <= num <= 100:
    print("Within range")
else:
    print("Out of range")
```

---

14. Print "Weekend" if the day is Saturday or Sunday; otherwise, print "Weekday"

```
day = input("Enter a day: ").lower()
if day in ["saturday", "sunday"]:
    print("Weekend")
else:
    print("Weekday")
```

---

15. Find if a given number is exactly divisible by both 3 and 7

```
num = int(input("Enter a number: "))
if num % 3 == 0 and num % 7 == 0:
    print("Divisible by 3 and 7")
else:
    print("Not divisible by both")
```

---

16. Check if the sum of two numbers is greater than 100

```
a = int(input("Enter first number: "))
b = int(input("Enter second number: "))
if (a + b) > 100:
    print("Sum is greater than 100")
else:
    print("Sum is 100 or less")
```

---

17. Write a program to find the minimum of two numbers

```
a = int(input("Enter first number: "))
b = int(input("Enter second number: "))
if a < b:
    print("Minimum:", a)
else:
    print("Minimum:", b)
```

---

18. Check if a number is divisible by 2 but not by 3

```
num = int(input("Enter a number: "))
if num % 2 == 0 and num % 3 != 0:
    print("Divisible by 2 but not by 3")
else:
    print("Does not meet criteria")
```

---

19. Determine if a given alphabet is uppercase or lowercase

```
char = input("Enter an alphabet: ")
if char.isupper():
    print("Uppercase")
else:
    print("Lowercase")
```

---

20. Check if a triangle is valid given three side lengths

```
a = int(input("Enter first side: "))
b = int(input("Enter second side: "))
c = int(input("Enter third side: "))
if a + b > c and a + c > b and b + c > a:
    print("Valid Triangle")
else:
```

```
    print("Invalid Triangle")
```

MEDIUM LEVEL ➔

21. Find the largest of three numbers

```
a = int(input("Enter first number: "))
b = int(input("Enter second number: "))
c = int(input("Enter third number: "))
if a >= b and a >= c:
    print("Largest:", a)
elif b >= a and b >= c:
    print("Largest:", b)
else:
    print("Largest:", c)
```

22. Determine if a number is a prime number

```
num = int(input("Enter a number: "))
if num > 1:
    for i in range(2, int(num**0.5) + 1):
        if num % i == 0:
            print("Not a prime number")
            break
    else:
        print("Prime number")
else:
    print("Not a prime number")
```

23. Check if a person is eligible for a driving license

```
age = int(input("Enter age: "))
passed_test = input("Did you pass the driving test? (yes/no): ").lower()
if age >= 18 and passed_test == "yes":
    print("Eligible for a driving license")
else:
    print("Not eligible")
```

24. Determine if a triangle is equilateral, isosceles, or scalene

```
a = int(input("Enter first side: "))
b = int(input("Enter second side: "))
c = int(input("Enter third side: "))
if a == b == c:
    print("Equilateral Triangle")
elif a == b or b == c or a == c:
    print("Isosceles Triangle")
else:
    print("Scalene Triangle")
```

25. Determine if a student passes or fails

```
marks = int(input("Enter marks: "))
if marks >= 40:
    print("Pass")
else:
    print("Fail")
```

---

26. Check if a number is a palindrome

```
num = input("Enter a number: ")
if num == num[::-1]:
    print("Palindrome")
else:
    print("Not a Palindrome")
```

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27. Calculate electricity bill

```
units = int(input("Enter electricity units consumed: "))
if units <= 100:
    bill = units * 5
elif units <= 300:
    bill = (100 * 5) + (units - 100) * 10
else:
    bill = (100 * 5) + (200 * 10) + (units - 300) * 15
print("Total Bill: ₹", bill)
```

---

28. Find the grade of a student

```
marks = int(input("Enter marks: "))
if marks >= 90:
    print("Grade: A")
elif marks >= 80:
    print("Grade: B")
elif marks >= 70:
    print("Grade: C")
elif marks >= 60:
    print("Grade: D")
elif marks >= 40:
    print("Grade: E")
else:
    print("Grade: F (Fail)")
```

---

29. Determine if a given date is valid

```
import calendar
day = int(input("Enter day: "))
month = int(input("Enter month: "))
year = int(input("Enter year: "))
if 1 <= month <= 12 and 1 <= day <= calendar.monthrange(year, month)[1]:
    print("Valid date")
else:
    print("Invalid date")
```

---

30. Check if a given time is AM or PM

```
hour = int(input("Enter hour (24-hour format): "))
if hour < 12:
    print("AM")
else:
    print("PM")
```

---

31. Check if a number is an Armstrong number

```
num = input("Enter a number: ")
power = len(num)
if sum(int(digit) ** power for digit in num) == int(num):
    print("Armstrong Number")
else:
    print("Not an Armstrong Number")
```

---

32. Determine the type of quadrilateral

```
a = int(input("Enter first side: "))
b = int(input("Enter second side: "))
c = int(input("Enter third side: "))
d = int(input("Enter fourth side: "))
if a == b == c == d:
    print("Square")
elif a == c and b == d:
    print("Rectangle")
else:
    print("Other Quadrilateral")
```

---

33. Implement a basic calculator

```
a = float(input("Enter first number: "))
b = float(input("Enter second number: "))
op = input("Enter operation (+, -, *, /): ")
if op == "+":
    print("Result:", a + b)
elif op == "-":
    print("Result:", a - b)
elif op == "*":
    print("Result:", a * b)
elif op == "/":
    print("Result:", a / b)
else:
    print("Invalid operation")
```

---

34. Check if a bank account balance is sufficient for withdrawal

```
balance = float(input("Enter account balance: "))
withdraw = float(input("Enter withdrawal amount: "))
if balance >= withdraw:
    print("Withdrawal successful")
else:
    print("Insufficient funds")
```

---

35. Implement a temperature converter

```
temp = float(input("Enter temperature: "))
unit = input("Enter unit (C/F): ").upper()
if unit == "C":
    print("Fahrenheit:", (temp * 9/5) + 32)
elif unit == "F":
    print("Celsius:", (temp - 32) * 5/9)
else:
    print("Invalid unit")
```

---

36. Check if a number lies within a range (50-100)

```
num = int(input("Enter a number: "))
if 50 <= num <= 100:
    print("Within range")
else:
    print("Out of range")
```

---

37. Determine if a year is a century year

```
year = int(input("Enter a year: "))
if year % 100 == 0:
    print("Century Year")
else:
    print("Not a Century Year")
```

---

38. Check if a number is a power of 2

```
num = int(input("Enter a number: "))
if num > 0 and (num & (num - 1)) == 0:
    print("Power of 2")
else:
    print("Not a Power of 2")
```

---

39. Determine how many days a month has

```
month = int(input("Enter month (1-12): "))
year = int(input("Enter year: "))
days = [31, 28 + (1 if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0) else 0), 31,
30, 31, 30, 31, 31, 30, 31, 30, 31]
print("Days:", days[month - 1])
```

---

40. Validate a password

```
import re
password = input("Enter password: ")
if len(password) >= 8 and re.search(r"[A-Za-z]", password) and re.search(r"\d", password):
    print("Valid Password")
else:
    print("Invalid Password")
```

HARD LEVEL ➔

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41. Implement a ticket pricing system

```
age = int(input("Enter age: "))
```

```
if age < 5:
    print("Ticket Price: Free")
elif age >= 60:
    print("Ticket Price: ₹50")
else:
    print("Ticket Price: ₹100")
```

---

42. Check if three numbers form a Pythagorean triplet

```
a, b, c = sorted(map(int, input("Enter three numbers: ").split()))
if a**2 + b**2 == c**2:
    print("Pythagorean Triplet")
else:
    print("Not a Pythagorean Triplet")
```

---

43. Convert a Roman numeral to an integer

```
def roman_to_int(s):
    roman = {'I': 1, 'V': 5, 'X': 10, 'L': 50, 'C': 100, 'D': 500, 'M': 1000}
    total = 0
    for i in range(len(s)):
        if i > 0 and roman[s[i]] > roman[s[i - 1]]:
            total += roman[s[i]] - 2 * roman[s[i - 1]]
        else:
            total += roman[s[i]]
    return total

num = input("Enter Roman numeral: ").upper()
print("Integer:", roman_to_int(num))
```

---

44. Determine zodiac sign based on birth date

```
month = int(input("Enter birth month (1-12): "))
day = int(input("Enter birth day: "))

zodiac = [("Capricorn", 20), ("Aquarius", 19), ("Pisces", 20), ("Aries", 20),
          ("Taurus", 21), ("Gemini", 21), ("Cancer", 22), ("Leo", 22),
          ("Virgo", 22), ("Libra", 23), ("Scorpio", 23), ("Sagittarius", 22), ("Capricorn", 31)]

sign = zodiac[month - 1][0] if day <= zodiac[month - 1][1] else zodiac[month][0]
print("Zodiac Sign:", sign)
```

---

45. Check if a number is a Harshad number

```
num = int(input("Enter a number: "))
sum_digits = sum(int(digit) for digit in str(num))
if num % sum_digits == 0:
    print("Harshad Number")
else:
    print("Not a Harshad Number")
```

---

46. Validate an email format

```
import re
email = input("Enter email: ")
if re.match(r"^[\w\.-]+@[\w\.-]+\.(com|org|net|edu)$", email):
```

```
    print("Valid Email")
else:
    print("Invalid Email")
```

---

47. Check if a knight move in chess is valid

```
x1, y1 = map(int, input("Enter current position (x y): ").split())
x2, y2 = map(int, input("Enter new position (x y): ").split())

if (abs(x1 - x2), abs(y1 - y2)) in [(2, 1), (1, 2)]:
    print("Valid Knight Move")
else:
    print("Invalid Move")
```

---

48. Implement a loan eligibility checker

```
income = int(input("Enter monthly income: "))
credit_score = int(input("Enter credit score: "))
employed = input("Are you employed? (yes/no): ").lower()

if income >= 25000 and credit_score >= 700 and employed == "yes":
    print("Loan Approved")
else:
    print("Loan Denied")
```

---

49. Implement a rock-paper-scissors game

```
import random
choices = ["rock", "paper", "scissors"]
user = input("Enter rock, paper, or scissors: ").lower()
computer = random.choice(choices)

print("Computer chose:", computer)
if user == computer:
    print("It's a tie!")
elif (user == "rock" and computer == "scissors") or
     (user == "scissors" and computer == "paper") or
     (user == "paper" and computer == "rock"):
    print("You win!")
else:
    print("You lose!")
```

---

50. Find the day of the week for a given date (without built-in functions)

```
def day_of_week(d, m, y):
    if m < 3:
        m += 12
        y -= 1
    k = y % 100
    j = y // 100
    day = (d + (13 * (m + 1)) // 5 + k + (k // 4) + (j // 4) - 2 * j) % 7
    days = ["Saturday", "Sunday", "Monday", "Tuesday", "Wednesday", "Thursday", "Friday"]
    return days[day]

day, month, year = map(int, input("Enter date (DD MM YYYY): ").split())
```

```
print("Day of the Week:", day_of_week(day, month, year))
```