**Lab Assignment 3**

**To Submit: Give shell scripts for following:**

**Q1. Find Largest of Three Numbers**

**python**

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**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)**

**Q2. Check if a Year is Leap Year or Not**

**python**

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**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")**

**Q3. Validate Triangle from Angles**

**python**

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**a = int(input("Enter first angle: "))**

**b = int(input("Enter second angle: "))**

**c = int(input("Enter third angle: "))**

**if a + b + c == 180:**

**print("Valid Triangle")**

**else:**

**print("Invalid Triangle")**

**Q4. Check Alphabet, Digit or Special Character**

**python**

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**ch = input("Enter a character: ")**

**if ch.isalpha():**

**print("Alphabet")**

**elif ch.isdigit():**

**print("Digit")**

**else:**

**print("Special Character")**

**Q5. Calculate Profit or Loss**

**python**

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**cp = float(input("Enter cost price: "))**

**sp = float(input("Enter selling price: "))**

**if sp > cp:**

**print("Profit =", sp - cp)**

**elif cp > sp:**

**print("Loss =", cp - sp)**

**else:**

**print("No Profit No Loss")**

**Q6. Print All Even and Odd Numbers from 1 to 10**

**python**

**print("Even Numbers:")**

**for i in range(1, 11):**

**if i % 2 == 0:**

**print(i)**

**print("Odd Numbers:")**

**for i in range(1, 11):**

**if i % 2 != 0:**

**print(i)**

**Q7. Print Table of a Given Number**

**python**

**num = int(input("Enter a number: "))**

**for i in range(1, 11):**

**print(f"{num} x {i} = {num \* i}")**

**Q8. Find Factorial of a Given Integer**

**python**

**n = int(input("Enter a number: "))**

**fact = 1**

**for i in range(1, n+1):**

**fact \*= i**

**print("Factorial =", fact)**

**Q9. Print Sum of All Even Numbers from 1 to 10**

**python**

**sum\_even = sum(i for i in range(1, 11) if i % 2 == 0)**

**print("Sum of even numbers =", sum\_even)**

**Q10. Print Sum of Digits of Any Number**

**python**

**n = int(input("Enter a number: "))**

**total = 0**

**while n > 0:**

**total += n % 10**

**n //= 10**

**print("Sum of digits =", total)**

**Q11. Basic Calculator (Add, Subtract, Multiply, Divide)**

**python**

**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 == '/':**

**if b != 0:**

**print("Result =", a / b)**

**else:**

**print("Cannot divide by zero")**

**else:**

**print("Invalid operation")**

**Q12. Print Days of the Week**

**python**

**days = ["Sunday", "Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday"]**

**for day in days:**

**print(day)**

**Q13. Print Starting 4 Months Having 31 Days**

**python**

**months = ["January", "March", "May", "July"]**

**for month in months:**

**print(month)**

**Q14. Using Functions**

**a. Check Armstrong Number**

**python**

**def is\_armstrong(num):**

**n = len(str(num))**

**return num == sum(int(d)\*\*n for d in str(num))**

**n = int(input("Enter a number: "))**

**print("Armstrong" if is\_armstrong(n) else "Not Armstrong")**

**B. Check Palindrome Number**

**python**

**def is\_palindrome(num):**

**return str(num) == str(num)[::-1]**

**n = int(input("Enter a number: "))**

**print("Palindrome" if is\_palindrome(n) else "Not Palindrome")**

**C. Print Fibonacci Series up to N Terms**

**python**

**def fibonacci(n):**

**a, b = 0, 1**

**for \_ in range(n):**

**print(a, end=" ")**

**a, b = b, a + b**

**n = int(input("Enter number of terms: "))**

**fibonacci(n)**

**D. Check Prime or Composite**

**python**

**def is\_prime(n):**

**if n <= 1:**

**return False**

**for i in range(2, int(n\*\*0.5)+1):**

**if n % i == 0:**

**return False**

**return True**

**n = int(input("Enter a number: "))**

**print("Prime" if is\_prime(n) else "Composite")**

**E. Convert Decimal to Binary**

**python**

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**def decimal\_to\_binary(n):**

**return bin(n)[2:]**

**n = int(input("Enter a decimal number: "))**

**print("Binary:", decimal\_to\_binary(n))**