# Flowcharts for C Programming Assignment

## 1. Print "Adamas University"

**Start  
↓  
Print "Adamas University"  
↓  
End**

## 2. Add two float numbers

**Start  
↓  
Input a, b  
↓  
sum = a + b  
↓  
Print sum  
↓  
End**

## 3. Subtract two float numbers

**Start  
↓  
Input a, b  
↓  
diff = a - b  
↓  
Print diff  
↓  
End**

## 4. Multiplication table (without loop)

**Start  
↓  
Input n  
↓  
Print n × 1  
↓  
Print n × 2  
↓  
Print n × 3  
↓  
...  
↓  
Print n × 10  
↓  
End**

## 5. ASCII value of a character

**Start  
↓  
Input ch  
↓  
ascii = integer value of ch  
↓  
Print ascii  
↓  
End**

## 6. Simple Interest

**Start  
↓  
Input P, R, T  
↓  
SI = (P × R × T) / 100  
↓  
Print SI  
↓  
End**

## 7. Area of a circle

**Start  
↓  
Input radius r  
↓  
area = 3.14159 × r × r  
↓  
Print area  
↓  
End**

## 8. Convert °F ↔ °C

**Start  
↓  
Print menu: 1) F→C 2) C→F  
↓  
Input choice  
↓  
If choice == 1 → Input F → C = (F - 32) × 5/9 → Print C  
Else if choice == 2 → Input C → F = (C × 9/5) + 32 → Print F  
↓  
End**

## 9. Swap two numbers (using 3rd variable)

**Start  
↓  
Input a, b  
↓  
temp = a  
↓  
a = b  
↓  
b = temp  
↓  
Print a, b  
↓  
End**

## 10. Swap two numbers (without 3rd variable)

**Start  
↓  
Input a, b  
↓  
a = a + b  
↓  
b = a - b  
↓  
a = a - b  
↓  
Print a, b  
↓  
End**

## 11. Last digit of integer

**Start  
↓  
Input n  
↓  
last = n % 10  
↓  
Print last  
↓  
End**

## 12. Compound Interest

**Start  
↓  
Input P, R, N  
↓  
A = P × (1 + R/100)^N  
↓  
CI = A - P  
↓  
Print CI  
↓  
End**

## 13. Area and Perimeter of Rectangle

**Start  
↓  
Input length l, breadth b  
↓  
area = l × b  
↓  
perimeter = 2 × (l + b)  
↓  
Print area, perimeter  
↓  
End**

## 14. Floor and Ceiling

**Start  
↓  
Input x  
↓  
f = floor(x)  
↓  
c = ceil(x)  
↓  
Print f, c  
↓  
End**

## 15. Roots of quadratic equation

**Start  
↓  
Input a, b, c  
↓  
D = b² - 4ac  
↓  
If D < 0 → Print "Imaginary Roots"  
Else → r1 = (-b + √D)/(2a), r2 = (-b - √D)/(2a) → Print r1, r2  
↓  
End**

## 16. Coin Toss

**Start  
↓  
toss = random(0 or 1)  
↓  
If toss == 0 → Print "Head"  
Else → Print "Tail"  
↓  
End**

## 17. Positive / Negative / Zero

**Start  
↓  
Input n  
↓  
If n > 0 → Print "Positive"  
Else if n < 0 → Print "Negative"  
Else → Print "Zero"  
↓  
End**

## 18. Greatest among 3 numbers (Ladder if-else)

**Start  
↓  
Input a, b, c  
↓  
If a ≥ b and a ≥ c → Print "a is greatest"  
Else if b ≥ a and b ≥ c → Print "b is greatest"  
Else → Print "c is greatest"  
↓  
End**

## 19. Greatest among 3 numbers (Nested if-else)

**Start  
↓  
Input a, b, c  
↓  
If a ≥ b  
 ↓  
 If a ≥ c → Print "a is greatest"  
 Else → Print "c is greatest"  
Else  
 ↓  
 If b ≥ c → Print "b is greatest"  
 Else → Print "c is greatest"  
↓  
End**

## 20. Leap year check

**Start  
↓  
Input year y  
↓  
If y % 400 == 0 → Print "Leap Year"  
Else if y % 100 == 0 → Print "Not Leap Year"  
Else if y % 4 == 0 → Print "Leap Year"  
Else → Print "Not Leap Year"  
↓  
End**

## 21. Check Roll Number 100

**Start  
↓  
Input roll  
↓  
If roll == 100 → Print "Present"  
Else → Print "Not Present"  
↓  
End**

## 22. Odd or Even

**Start  
↓  
Input n  
↓  
If n % 2 == 0 → Print "Even"  
Else → Print "Odd"  
↓  
End**

## 23. Greatest among two numbers

**Start  
↓  
Input a, b  
↓  
If a > b → Print "a is greater"  
Else if b > a → Print "b is greater"  
Else → Print "Equal"  
↓  
End**

## 24. Vowel or Consonant

**Start  
↓  
Input ch  
↓  
If ch in (a,e,i,o,u,A,E,I,O,U) → Print "Vowel"  
Else → Print "Consonant"  
↓  
End**

## 25. Size of data types

**Start  
↓  
Print sizeof(int)  
↓  
Print sizeof(float)  
↓  
Print sizeof(double)  
↓  
Print sizeof(char)  
↓  
End**

## 26. Simple Calculator (Switch-case)

**Start  
↓  
Input a, b  
↓  
Input operator (+, -, \*, /)  
↓  
Switch(operator)  
 Case '+': result = a + b  
 Case '-': result = a - b  
 Case '\*': result = a \* b  
 Case '/': result = a / b  
 Default: Print "Invalid operator"  
↓  
Print result  
↓  
End**

## 27. Vowel or Consonant (Switch-case)

**Start  
↓  
Input ch  
↓  
Switch(ch)  
 Case 'a','e','i','o','u','A','E','I','O','U': Print "Vowel"  
 Default: Print "Consonant"  
↓  
End**

## 28. Total salary of employee (Switch-case)

**Start  
↓  
Input basic salary, designation  
↓  
Switch(designation)  
 Case 1: HRA=20%, DA=80%  
 Case 2: HRA=25%, DA=90%  
 Case 3: HRA=30%, DA=95%  
↓  
gross = basic + (basic×HRA/100) + (basic×DA/100)  
↓  
Print gross  
↓  
End**

## 29. Electricity bill (Switch-case)

**Start  
↓  
Input units  
↓  
Switch(unit range)  
 Case 1: units ≤ 100 → bill = units×1.5  
 Case 2: 101–200 → bill = 100×1.5 + (units−100)×2  
 Case 3: 201–300 → bill = 100×1.5 + 100×2 + (units−200)×3  
 Default: bill = 100×1.5 + 100×2 + 100×3 + (units−300)×5  
↓  
Print bill  
↓  
End**

## 30. Student grade (Switch-case)

**Start  
↓  
Input marks  
↓  
Switch(marks / 10)  
 Case 10,9: Print "Grade A"  
 Case 8: Print "Grade B"  
 Case 7: Print "Grade C"  
 Case 6: Print "Grade D"  
 Default: Print "Fail"  
↓  
End**

## 31. Multiplication Table using For Loop

**Start  
↓  
Input n  
↓  
For i = 1 to 10  
 ↓  
 Print n × i  
↓  
End**

## 32. Sum of n Natural Numbers

**Start  
↓  
Input n  
↓  
sum = 0  
↓  
For i = 1 to n  
 ↓  
 sum = sum + i  
↓  
Print sum  
↓  
End**

## 33. Factorial of a Number using For Loop

**Start  
↓  
Input n  
↓  
fact = 1  
↓  
For i = 1 to n  
 ↓  
 fact = fact × i  
↓  
Print fact  
↓  
End**

## 34. Fibonacci Series up to n Terms

**Start  
↓  
Input n  
↓  
a = 0, b = 1  
↓  
Print a, b  
↓  
For i = 3 to n  
 ↓  
 next = a + b  
 ↓  
 Print next  
 ↓  
 a = b  
 ↓  
 b = next  
↓  
End**

## 35. Prime Numbers Between a Range

**Start  
↓  
Input lower, upper  
↓  
For num = lower to upper  
 ↓  
 flag = 0  
 ↓  
 For i = 2 to num/2  
 ↓  
 If num % i == 0 → flag = 1 → break  
 ↓  
 If flag == 0 and num > 1 → Print num  
↓  
End**