# Algorithms of C Programming Assignments

## 1. Print "Adamas University"

1. Start  
2. Print "Adamas University"  
3. Stop

## 2. Add two float numbers

1. Start  
2. Input a, b  
3. sum = a + b  
4. Print sum  
5. Stop

## 3. Subtract two float numbers

1. Start  
2. Input a, b  
3. diff = a - b  
4. Print diff  
5. Stop

## 4. Multiplication table without loop

1. Start  
2. Input n  
3. Print n × 1, n × 2, …, n × 10 manually  
4. Stop

## 5. ASCII value of a character

1. Start  
2. Input ch  
3. Find ASCII value using (int)ch  
4. Print ASCII value  
5. Stop

## 6. Simple Interest

1. Start  
2. Input P, R, T  
3. SI = (P × R × T) / 100  
4. Print SI  
5. Stop

## 7. Area of a circle

1. Start  
2. Input radius r  
3. area = 3.14159 × r × r  
4. Print area  
5. Stop

## 8. °F ↔ °C conversion

1. Start  
2. Input choice (1 for °F→°C, 2 for °C→°F)  
3. If 1, Input F, C = (F - 32) × 5/9  
4. If 2, Input C, F = (C × 9/5) + 32  
5. Print result  
6. Stop

## 9. Swap using 3rd variable

1. Start  
2. Input a, b  
3. temp = a  
4. a = b  
5. b = temp  
6. Print a, b  
7. Stop

## 10. Swap without 3rd variable

1. Start  
2. Input a, b  
3. a = a + b  
4. b = a - b  
5. a = a - b  
6. Print a, b  
7. Stop

## 11. Last digit of integer

1. Start  
2. Input n  
3. last = n % 10  
4. Print last  
5. Stop

## 12. Compound Interest

1. Start  
2. Input P, R, N  
3. A = P × (1 + R/100)^N  
4. CI = A - P  
5. Print CI  
6. Stop

## 13. Rectangle area and perimeter

1. Start  
2. Input l, b  
3. area = l × b  
4. perimeter = 2 × (l + b)  
5. Print area, perimeter  
6. Stop

## 14. Floor and Ceiling

1. Start  
2. Input x  
3. Find floor(x) and ceil(x)  
4. Print both  
5. Stop

## 15. Quadratic roots

1. Start  
2. Input a, b, c  
3. D = b² - 4ac  
4. If D < 0 → Print imaginary roots  
5. Else → r1 = (-b + √D)/(2a), r2 = (-b - √D)/(2a)  
6. Print r1, r2  
7. Stop

## 16. Coin Toss

1. Start  
2. Generate random(0 or 1)  
3. If 0 → Print Head  
4. Else → Print Tail  
5. Stop

## 17. Positive/Negative

1. Start  
2. Input n  
3. If n > 0 → Positive  
4. Else if n < 0 → Negative  
5. Else → Zero  
6. Stop

## 18. Greatest among 3 numbers (Ladder)

1. Start  
2. Input a, b, c  
3. If a ≥ b and a ≥ c → a greatest  
4. Else if b ≥ a and b ≥ c → b greatest  
5. Else → c greatest  
6. Stop

## 19. Greatest among 3 numbers (Nested)

1. Start  
2. Input a, b, c  
3. If a ≥ b  
 If a ≥ c → a greatest  
 Else → c greatest  
4. Else  
 If b ≥ c → b greatest  
 Else → c greatest  
5. Stop

## 20. Leap year

1. Start  
2. Input year  
3. If divisible by 400 → Leap  
4. Else if divisible by 100 → Not Leap  
5. Else if divisible by 4 → Leap  
6. Else → Not Leap  
7. Stop

## 21. Check Roll 100

1. Start  
2. Input roll  
3. If roll == 100 → Present  
4. Else → Not Present  
5. Stop

## 22. Odd or Even

1. Start  
2. Input n  
3. If n % 2 == 0 → Even  
4. Else → Odd  
5. Stop

## 23. Greatest among two

1. Start  
2. Input a, b  
3. If a > b → a greatest  
4. Else if b > a → b greatest  
5. Else → Equal  
6. Stop

## 24. Vowel or Consonant

1. Start  
2. Input ch  
3. If ch in (a,e,i,o,u,A,E,I,O,U) → Vowel  
4. Else → Consonant  
5. Stop

## 25. Data type sizes

1. Start  
2. Print sizeof(int), sizeof(float), sizeof(double), sizeof(char)  
3. Stop

## 26. Calculator (Switch-case)

1. Start  
2. Input a, b, op  
3. Switch(op)  
 + → sum  
 - → diff  
 \* → product  
 / → divide  
 default → invalid  
4. Print result  
5. Stop

## 27. Vowel check (Switch-case)

1. Start  
2. Input ch  
3. Switch(ch)  
 Case vowels → Print "Vowel"  
 Default → Print "Consonant"  
4. Stop

## 28. Employee salary

1. Start  
2. Input basic, designation  
3. Switch(designation) → set HRA, DA  
4. gross = basic + (basic×HRA/100) + (basic×DA/100)  
5. Print gross  
6. Stop

## 29. Electricity bill

1. Start  
2. Input units  
3. Apply conditions based on unit range  
4. Calculate bill accordingly  
5. Print bill  
6. Stop

## 30. Student grade

1. Start  
2. Input marks  
3. Switch(marks/10)  
 10,9 → A  
 8 → B  
 7 → C  
 6 → D  
 default → Fail  
4. Stop

## 31. Multiplication table (for loop)

1. Start  
2. Input n  
3. For i = 1 to 10 → Print n × i  
4. Stop

## 32. Sum of n natural numbers

1. Start  
2. Input n  
3. sum = 0  
4. For i = 1 to n → sum = sum + i  
5. Print sum  
6. Stop

## 33. Factorial using for loop

1. Start  
2. Input n  
3. fact = 1  
4. For i = 1 to n → fact = fact × i  
5. Print fact  
6. Stop

## 34. Fibonacci series

1. Start  
2. Input n  
3. a = 0, b = 1  
4. Print a, b  
5. For i = 3 to n → next = a + b, Print next, a=b, b=next  
6. Stop

## 35. Prime numbers between range

1. Start  
2. Input lower, upper  
3. For num = lower to upper  
 flag = 0  
 For i = 2 to num/2  
 If num % i == 0 → flag = 1 → break  
 If flag == 0 → Print num  
4. Stop