FUNCTION PROGRAM QUESTION BANK

1) WITHOUT RETURN, WITHOUT ARGUMENT

1. **Print your name**
   - Sample Input: *(none)*
   - Sample Output: `My Name is Harsh`
2. **Print "Hello, World!" 10 times**
   - Sample Input: *(none)*
   - Sample Output:

```
Hello, World!
Hello, World!
...
(10 times)
```

3. **Print first 10 natural numbers**
   - Sample Input: *(none)*
   - Sample Output: `1 2 3 4 5 6 7 8 9 10`
4. **Display multiplication table of 5**
   - Sample Input: *(none)*
   - Sample Output:

```
5 x 1 = 5
5 x 2 = 10
...
5 x 10 = 50
```

5. **Print all even numbers between 1 and 50**
   - Sample Input: *(none)*
   - Sample Output: `2 4 6 8 ... 50`
6. **Print sum of first 100 natural numbers**
   - Sample Input: *(none)*
   - Sample Output: `5050`
7. **Print squares of numbers from 1 to 10**

- Sample Input: *(none)*
- Sample Output: `1 4 9 16 25 36 49 64 81 100`

8. **Check whether a number is prime (input inside function)**
   - Sample Input: `7`
   - Sample Output: `7 is Prime`
9. **Print Fibonacci series up to 10 terms**
   - Sample Input: *(none)*
   - Sample Output: `0 1 1 2 3 5 8 13 21 34`
10. **Print all prime numbers between 1 and 100**
    - Sample Input: *(none)*
    - Sample Output: `2 3 5 7 ... 97`

---

2) WITHOUT RETURN, WITH ARGUMENT

1. **Accept a number and print its square**
   - Sample Input: `5`
   - Sample Output: `25`
2. **Accept a number and print whether it is even or odd**
   - Sample Input: `8`
   - Sample Output: `Even`
3. **Accept two numbers and print their sum**
   - Sample Input: `5, 10`
   - Sample Output: `15`
4. **Accept two numbers and print their product**
   - Sample Input: `4, 6`
   - Sample Output: `24`
5. **Accept a number and display its multiplication table**
   - Sample Input: `3`
   - Sample Output:

```
3 x 1 = 3
...
3 x 10 = 30
```

6. **Accept two numbers and print the greater one**

- Sample Input: `12, 9`
- Sample Output: `12`

7. **Accept a string and print it in reverse**
   - Sample Input: `Hello`
   - Sample Output: `olleH`
8. **Accept marks and print grade (A, B, C, etc.)**
   - Sample Input: `85`
   - Sample Output: `Grade A`
9. **Accept a number and print its factorial**
   - Sample Input: `5`
   - Sample Output: `120`
10. **Accept an array of numbers and print all even numbers**
    - Sample Input: `[1, 2, 3, 4, 5, 6]`
    - Sample Output: `2 4 6`

---

3) WITH RETURN, WITHOUT ARGUMENT

1. **Return a fixed number (like 10)**
   - Sample Output: `10`
2. **Return the current year (hardcoded)**
   - Sample Output: `2025`
3. **Return sum of first 50 natural numbers**
   - Sample Output: `1275`
4. **Return the largest of three fixed numbers**
   - Sample Output: `25`
5. **Return factorial of 5**
   - Sample Output: `120`
6. **Generate and return a random number**
   - Sample Output: `42` (random each time)
7. **Return area of a circle with fixed radius**
   - Sample Output: `78.5`
8. **Return whether a fixed number is palindrome or not**

- Sample Output: `121 is Palindrome`

9. **Return sum of squares of first 10 numbers**
   - Sample Output: `385`
10. **Return whether a fixed number is Armstrong number**
    - Sample Output: `153 is Armstrong`

---

4) WITH RETURN, WITH ARGUMENT

1. **Return square of a given number**
   - Sample Input: `6`
   - Sample Output: `36`
2. **Return cube of a given number**
   - Sample Input: `3`
   - Sample Output: `27`
3. **Return maximum of two numbers**
   - Sample Input: `9, 15`
   - Sample Output: `15`
4. **Return minimum of two numbers**
   - Sample Input: `7, 4`
   - Sample Output: `4`
5. **Return whether a number is prime**
   - Sample Input: `11`
   - Sample Output: `True`
6. **Return GCD of two numbers**
   - Sample Input: `12, 18`
   - Sample Output: `6`
7. **Return LCM of two numbers**
   - Sample Input: `4, 6`
   - Sample Output: `12`
8. **Return area of circle using radius**
   - Sample Input: `7`
   - Sample Output: `153.86`
9. **Return sum of digits of a number**

- Sample Input: `1234`
- Sample Output: `10`

10. **Return length of a string**

- Sample Input: `Hello`
- Sample Output: `5`

---

5) COMBINED QUESTIONS

1. **Calculator operations (+, -, , /)*

- Sample Input: `10, 5`
- Sample Output:

```
Sum = 15
Difference = 5
Product = 50
Quotient = 2
```

2. **Marks to grade system**

- Sample Input: `80, 90, 70`
- Sample Output: `Percentage = 80, Grade A`

3. **Array operations**

- Sample Input: `[2, 4, 6, 8]`
- Sample Output: `Sum = 20, Max = 8`

4. **Palindrome string check**

- Sample Input: `madam`
- Sample Output: `Palindrome`

5. **Prime check and factors**

- Sample Input: `28`
- Sample Output: `Prime? No, Factors: 1 2 4 7 14 28`

6. **Menu-driven area calculation**

- Sample Input: `circle, radius=7`
- Sample Output: `Area = 153.86`

7. **Salary calculation**

- Sample Input: `Basic = 10000`
- Sample Output: `Gross = 15000`

8. **Library system**
   - Sample Input: `Book ID=101`
   - Sample Output: `Available, Fine=0`
9. **Student result system**
   - Sample Input: `85, 90, 80`
   - Sample Output: `Percentage=85, Grade=A`
10. **Mini ATM**
    - Sample Input: `Deposit 500, Withdraw 200`
    - Sample Output: `Balance=300`

---

6) RECURSION QUESTIONS

1. **Recursive print numbers 1 to N**
   - Sample Input: `5`
   - Sample Output: `1 2 3 4 5`
2. **Recursive print numbers N to 1**
   - Sample Input: `5`
   - Sample Output: `5 4 3 2 1`
3. **Recursive sum of digits**
   - Sample Input: `1234`
   - Sample Output: `10`
4. **Recursive factorial**
   - Sample Input: `5`
   - Sample Output: `120`
5. **Recursive Fibonacci**
   - Sample Input: `5`
   - Sample Output: `0 1 1 2 3`
6. **Recursive power (a^b)**
   - Sample Input: `2, 3`
   - Sample Output: `8`
7. **Recursive GCD**
   - Sample Input: `48, 18`
   - Sample Output: `6`
8. **Recursive reverse string**

- Sample Input: `Hello`
- Sample Output: `olleH`

9. **Recursive palindrome check**
   - Sample Input: `121`
   - Sample Output: `Palindrome`
10. **Recursive Tower of Hanoi**
    - Sample Input: `3 disks`
    - Sample Output: `Moves sequence displayed`