Lab session 7

Part B/section A

8.

```
#include <stdio.h>
#include <stdlib.h>
int main() {
int number, originalNumber, remainder, result = 0, n = 0;
printf("Enter a number: ");
scanf("%d", &number);
originalNumber = number;
while (originalNumber != 0) {
originalNumber /= 10;
++n;
}
originalNumber = number;
while (originalNumber != 0) {
remainder = originalNumber % 10;
result += pow(remainder, n);
originalNumber /= 10;
}
if (result == number) {
printf("%d is an Armstrong number.\n", number);
} else {
printf("%d is not an Armstrong number.\n", n
umber);
}
return 0;
}
```

9.

```
#include <stdio.h>
#include <stdlib.h>
int main() {
char letter;
printf("ASCII values for letters A to Z:\n");
for (letter = 'A'; letter <= 'Z'; letter++) {
printf("Letter: %c | ASCII Value: %d\n", letter, letter);
}
return 0;
}
```

10.

```
#include <stdio.h>
#include <stdlib.h>
int main() {
int rows;
printf("Enter the number of rows: ");
scanf("%d", &rows);
printf("Pattern:\n");
for (int i = 1; i <= rows; i++) {
for (int j = 1; j <= i; j++) {
printf("*");
}
printf("\n");
}
return 0;
}
```

11.

```
#include <stdio.h>
#include <stdlib.h>
int main() {
int number, isPrime = 1;
printf("Enter a number: ");
scanf("%d", &number);
// Check if the number is less than 2
if (number < 2) {
isPrime = 0;
} else {
// Check for factors from 2 to sqrt(number)
for (int i = 2; i * i <= number; i++) {
if (number % i == 0) {
isPrime = 0;
break;
}
}
}
if (isPrime) {
printf("%d is a prime number.\n", number);
} else {
printf("%d is not a prime number.\n", number)
;
}
```

```
return 0;
}
```

12.

```
#include <stdio.h>
#include <stdlib.h>
int main() {
int number;
printf("Enter an integer: ");
scanf("%d", &number);
printf("Factors of %d: ", number);
for (int i = 1; i <= number; i++) {
if (number % i == 0) {
printf("%d ", i);
}
}
printf("\n");
return 0;
}
```

13.

```
#include <stdio.h>
#include <stdlib.h>
int main() {
int number, sum = 0;
printf("Enter numbers to add (enter -1 to stop):\n");
while (1) {
printf("Enter a number: ");
scanf("%d", &number);
if (number == -1) {
break;
}
sum += number;
}
printf("Sum of the numbers: %d\n", sum)
;
return 0;
}
```

14.

```
#include <stdio.h>
```

```
#include <stdlib.h>
int main() {
int rows;
printf("Enter the number of rows: ");
scanf("%d", &rows);
printf("Pattern:\n");
for (int i = 1; i <= rows; i++) {
for (int j = 1; j <= i; j++) {
printf("*");
}
printf("\n");
}
return 0;
}
```

15.

```
#include <stdio.h>
#include <stdlib.h>
int main() {
int arr[10];
int count = 0;
printf("Enter 10 integers:\n");
for (int i = 0; i < 10; i++) {
printf("Enter element %d: ", i + 1);
scanf("%d", &arr[i]);
}
for (int i = 0; i < 10; i++) {
if (arr[i] % 2 == 0) {
count++;
}
}
printf("Count of even numbers: %d\n", count
);
return 0;
}
```

16.

Section B

```
#include <stdio.h>
#include <stdlib.h>
int main() {
int numbers[10];
```

```
int positiveCount = 0, negativeCount = 0, zeroCount = 0;
printf("Enter 10 numbers:\n");
for (int i = 0; i < 10; i++) {
printf("Enter number %d: ", i + 1);
scanf("%d", &numbers[i]);
if (numbers[i] > 0) {
positiveCount++;
} else if (numbers[i] < 0) {
negativeCount++;
} else {
zeroCount++;
}
}
printf("Positive numbers: %d\n", positiveCount);
printf("Negative numbers: %d\n", negativeCount);
printf("Zeroes: %d\n", zeroC
ount);
return 0;
}
```