参考答案：

一、选择题

1. A

2. C

3. A

4. A

5. C

二、填空题

6.

7. 0

8. Conditionally convergent

三、解答题

9. Proof:

For any given , we need to make .

Simplify

To make , that is, . Take .

When , . So .

10. Solution:

.

As , , , , .

So .

11. Solution:

12. Solution:

Because .

Let .

.

As , . So the series converges.

13. Solution:

For the exponential series , use the ratio test.

Let , then .

Simplify to get .

So the convergence domain is .

14. Solution:

The Maclaurin series expansion of the function .

The first three terms are .