

【所有答案請寫在答案卷上，並依序作答】

I. Explain and distinguish the following terms: (每題3分，共45分)

1. autotrophs and heterotrophs
2. isogamy and oogamy
3. bloom and red tide
4. plurilocular gametangium and unilocular gametangium
5. flagellum and haptonema
6. protonema and gametophyte in mosses
7. eusporangiate and leptosporangiate sporogenesis
8. antheridiophore and archegoniophore
9. sporophytic self-incompatibility and gametophytic self-incompatibility
10. monosporic embryo sac and tetrasporic embryo sac
11. homothallic and heterothallic
12. monoecious plant and dioecious plant
13. plasmogamy and karyogamy
14. microphyll and megaphyll
15. microsporophyll and megasporophyll

II. Answer the following questions: (共55分)

1. The discovery of Prochlorophyta help us to understand more evolutionary trend of the algae. Please describe the most important characteristics of Prochlorophyta. (5%)
2. Describe three types of life cycle in algae. And give one example for each type. (10%)
3. Draw and label the sporophytes of *Riccia*, *Marchantia*, *Anthoceros* and *Polytrichum*. What is the evolutionary tendency of these structures? (10%)
4. Draw and label the important parts of protostele, siphonostele, and eustele. (5%)
5. Draw or describe the evolution of seeds. (5%)
6. Draw and label the longitudinal section of male strobilus and female strobulus in *Pinus*. (10%)
7. Describe and draw the microsporogenesis and male gametogenesis of 3-celled pollen in angiosperms. (5%)
8. The fungi are classified into Kingdom Protista and Kingdom Fungi in Six Kingdom System. Please give the reasons or the main characteristics for such classification. (5%)