Meghalaya

Class XII

Bio Botany

Sample Paper-2

Time allowed: 1.5 hours **Maximum Marks: 35**

General Instructions:

(i) Write all the answers in the Answer Script.

(ii) Attempt all parts of a question together at one place.

(iii) All questions are compulsory.

(iv) This question paper consists of 4 (four) Groups – A, B, C and D.

GROUP 'A' – Consists of **6** (six) Questions (Nos. **1-6**) of 1 (one) mark each; very short answer to be answered in 1 word or 1 sentence each.

GROUP 'B' – Consists of **4** (four) Questions (Nos. **7-10**) of 2 (two) marks each; which one alternative from the same units; short answer, to be answered in 20-30 words each.

GROUP 'C' – Consists of **3** (three) Questions (Nos. **11-13**) of 3(three) marks each; with one alternative, to be answered in 30-40 words each.

GROUP 'D' – Consists of **3** (three) Questions (Nos. **14-16**) of 4 (four) marks each; with one alternative, long answer type, to be answered in 60-70 words each.

GROUP – A

1. What is the role of plants, animals and bacteria in an ecosystem? **1**

2. What is the function of National Bureau of Plant Animal and Fish Genetic Resources? **1**

3. How can pollen grains of wheat and rice which tend to lose viability within 30 minutes of their release be made available months later for breeding programmes? **1**

4. Some plants have a mechanism of shedding of pollen before the maturation of stigma. Why? **1**

5. Mention the role of pioneer species in primary succession on rocks. **1**

6. India has more than 50,000 strains of rice. Mention the level of biodiversity it represents. **1**

GROUP - B

7. Even though each pollen grain has two male gametes, why are at least 10 pollen grains and not 5 pollen grains required to fertilise 10 ovules present in a particular carpel? **2**

Or

Mention two strategies evolved to prevent self-pollination in flowers.

8. What is interspecific hybridisation? Give one example of a crop in which it is practised and mention one advantage derived from it. **2**

9. State two differences between the first trophic levels of the detritus food chain and the grazing food chain. **1+1=2**

10. What is the ecological importance of biodiversity? **1+1=2**

GROUP – C

11. Alien species are a threat to native species. Justify taking examples of an animal and a plant alien species. **1+2=3**

12. What would happen to the successive trophic levels in the pyramid of energy, if the rate of reproduction of phytoplankton was slowed down? Suggest two factors which could cause such a reduction in phytoplankton reproduction. **3**

Or

Explain with the help of two examples, how the pyramid of numbers and the pyramid of biomass can look inverted. **1+1+1=3**

13. Trace the development of microsporocyte in the anther to a mature pollen grain. **2+1=3**

GROUP – D

14. What will be the fate of the following structures in an angiospermic plant? Ovary wall, ovule, zygote, outer integument, inner integument and primary endosperm nucleus. **4**

Or

Give reasons why

(i) Most zygotes in angiosperms divide only after certain amount of endosperm is formed.

(ii) Groundnut seeds are exalbuminous and castor seeds are albuminous.

(iii) Micropyle remains as a small pore in the seed coat of a seed.

(iv) Integuments of an ovule harden and the water content is highly reduced as the seed matures.

15. What is somatic hybridisation? Explain the various steps involved in the process. Mention any two uses of somatic hybridisation. **2+2=4**

16. Explain how does: The algal bloom eventually chokes the water body in an industrial area. **4**