

**B.Sc. Semester V (Hons.) Examinations - 2020**

**Subject-Botany**

**Paper- DSE-1**

**(Reproductive Biology of Angiosperms)**

**Full Marks-40**

**Time-2 hours**

**1. Answer any eight of the following questions:**

**5x8=40**

- a) Briefly describe the wall structure of an angiospermous pollen grain with a labelled diagram. 5
- b) Write a short note on Melissopalynology. 5
- c) Briefly describe the TTC test for assessing the viability of a pollen sample. 5
- d) Discuss the significance of pollen storage in brief. 5
- e) Describe the development of an *Allium* type of bisporic embryo sac with suitable labelled sketches. 5
- f) What do you understand by a tetrasporic embryo sac? Draw and label a mature *Plumbago* type of tetrasporic embryo sac. 2+3=5
- g) With suitable examples, discuss the role of dichogamy in effecting cross-pollination. 5
- h) Briefly describe the various types of polyembryony. 5
- i) Discuss the mixed pollination method and bud-pollination method used to overcome self-incompatibility. 5
- j) Differentiate between geitonogamy and xenogamy. Mention the characteristic features of an entomophilous flower. 2+3=5

**B.Sc. SEM-5 (Hons.) Examination-2020**  
**Subject- Botany (Hons)**  
**Paper: DSE -1**  
**(Silviculture and Forest Management)**

**Full Marks –40**

**Time – 2 hrs**

**Answer any eight of the following questions:**

**5X8=40**

1. Write briefly about the social forestry emphasizing in Indian context 5
2. Write down the need of biofertilizer in substituting the chemical fertilizer. 5
3. Write down briefly about *dry deciduous forest*. 5
4. What is *savannah*? Write a short note on subtropical *savannah*. 1+4=5
5. What is anomalous secondary growth? Write any two examples of plant having anomalous secondary growth and point out their anomaly. 1+2+2=5
6. What do you mean by synecology? Write down the effect of climate on synecology of forest. 1+4=5
7. Write down briefly about the role of animals on pollination and seed dispersal. 2½ +2½ =5
8. Write down short note on mass selection as a step for *tree improvement programme*. 5
9. Write down briefly about plant derived insecticides and importance of biological control. 2½ +2½ =5
10. Write down a short note on major forest products. 5

**B.Sc. 5<sup>th</sup> Semester (Honours) Examination, 2020 (CBCS)**

**Subject : Botany**

**Paper : DSE-1**

**(Techniques in Plant Sciences)**

**Time : 2 Hours**

**Full Marks : 40**

**The figures in the margin indicate full marks.**

**Candidates are required to give their answers in their own words as far as practicable.**

- 1. Answer any eight questions from the following 8x5=40**
- i) What do you mean by fluorescence microscopy. Mention its applications 2+3
  - ii) Make a concise account on chromosome banding 5
  - iii) What is chromatography. Why it is used? What do you understand by R<sub>f</sub> value? 2+2+1
  - iv) Highlight the applications of spectrophotometer in biological sciences 5
  - v) Discuss autoradiography along with its uses 5
  - vi) What is Svedberg unit? Give an idea of density gradient centrifugation 1+4
  - vii) Explain mean and median along with suitable examples 2½+2½
  - viii) Comment on chi square test. Mention its formula 3+2
  - ix) Write the principles of electrophoresis. What is the full form of SDS-PAGE 3+2
  - x) Write short notes on i) HPLC and ii) Light microscopy 2½+2½