

B.Sc. Semester - 5 (CBCS) Examination
Oct/Nov - 2025 (NEW COURSE)
Instrumentation, Forest and Forestry(Core)

Time: 2:30 Hours**Marks:70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

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- Que.1(A) Answer the following in very short: (04)**
- 1) Which light is used to sterilize the chamber of a laminar air flow before use?
 - 2) What type of sterilization is performed by an autoclave?
 - 3) Which sensor controls the temperature in an incubator?
 - 4) What force is generated by a centrifuge?
- Que.1(B) Answer any one of the following in brief: (03)**
- 1) How does an autoclave differ from an oven?
 - 2) Discuss the design of a centrifuge.
- Que.1(C) Answer any one of the following in detail: (07)**
- 1) Explain the design and working procedure of laminar air flow. Differentiate between horizontal and vertical laminar air flow.
 - 2) Describe the principle and procedure of growing microbial culture in an incubator.
- Que.2(A) Answer the following in very short: (04)**
- 1) Which environmental issue is caused by deforestation?
 - 2) What is the term for species found only in one specific region?
 - 3) **True or False:** Van Mahotsav is a government programme for planting trees in India.
 - 4) What is the practice of growing and managing trees called?
- Que.2(B) Answer any one of the following in brief: (03)**
- 1) Explain afforestation and reforestation as forest management programmes.
 - 2) Write a short note on the importance of forests.
- Que.2(C) Answer any one of the following in detail: (07)**
- 1) What is endemism? Discuss the forces responsible for the formation of endemic plants.
 - 2) Describe the causes and effects of deforestation.
- Que.3(A) Answer the following in very short: (04)**
- 1) Which chemical is commonly used for lower plant preservation?
 - 2) What is the main tool used in teasing?
 - 3) What is the step performed before section cutting in microtomy?
 - 4) **True or False:** Onion root tips are ideal for squash method.
- Que.3(B) Answer any one of the following in brief: (03)**
- 1) What is a whole mount? Explain the preparation technique for a whole mount.
 - 2) Explain techniques for preserving algae in liquid preservatives.
- Que.3(C) Answer any one of the following in detail: (07)**
- 1) What is microtomy? Explain the process, including embedding and sectioning.
 - 2) Define the squash method. Explain how to prepare a squash slide.
- Que.4(A) Answer the following in very short: (04)**
- 1) What is the common name of *Terminalia bellirica*?
 - 2) *Aegle marmelos* (Bael tree) belongs to which plant family?
 - 3) Which spice is obtained from the dried stigma of *Crocus sativus*?
 - 4) Which method involves storing seeds at low temperatures?
- Que.4(B) Answer any one of the following in brief: (03)**
- 1) Explain the major chemical constituents and medicinal uses of *Tinospora cordifolia*.
 - 2) Write the botanical names and families of the ingredients used in 'Triphala Churna'.

- Que.4(C) Answer any one of the following in detail: (07)**
- 1) Describe in-situ conservation methods for medicinal plants.
 - 2) What are spices? Describe five important spices cultivated in Gujarat.
- Que.5(A) Answer the following in very short: (04)**
- 1) What is the art and science of growing plants called?
 - 2) **True or False:** The main purpose of a kitchen garden is to grow vegetables.
 - 3) Which type of light is essential for indoor plant growth?
 - 4) What is the regular cutting of lawn grass called?
- Que.5(B) Answer any one of the following in brief: (03)**
- 1) Write a short note on indoor gardening.
 - 2) Explain important grass species commonly grown in lawns.
- Que.5(C) Answer any one of the following in detail: (07)**
- 1) What is gardening? Discuss the formal style of garden design, along with its merits and demerits.
 - 2) What do you mean by a kitchen garden? Describe a model kitchen garden.
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