

... units, i.e., 2 questions from each unit. These questions have to be answered in one word or a few words only. Each question will be of half mark. All the questions in **Section A** are compulsory. In **Section B**, 10 questions will be set from the 5 units, i.e., 2 questions from each unit. Students are required to attempt at least 1 question from each unit. Each question will carry 5 marks. The answers of each question should be given in about 250 words. In **Section C** there will be 4 descriptive type questions set from all the 5 units, not more than 1 question from each unit. These questions may also have subdivisions. The students are required to answer 2 questions, each in approximately 500 words. Each question will carry 10 marks.

In short, pattern of question paper and distribution of marks for UG classes will be as under :

Section A : 10 questions, 2 questions from each unit, short answer, all questions compulsory.

Total marks : 05

Section B : 10 questions, 2 question from each unit, 5 question to be attempted, at least 1 from each unit, answer approximately in 250 words.

Total marks : 25

Section C : 04 questions (question may have subdivision), not more than 1 question from each unit, descriptive type, answer in about 500 words, 2 questions to be attempted.

Total marks : 20

PRACTICALS

The practical exercises have been divided into following two groups based on the theory papers as detailed below:

Group-I Algae, Fungi, Lichens, Microbiology and Plant Pathology.

Group-II Bryophytes, Pteridophytes, Gymnosperms and Palaeobotany.

GROUP I

Microscopic preparations and study of following algal materials: *Nostoc*, *Oscillatoria*, *Chlamydomonas*, *Volvox*, *Coleochaete*, *Hydrodictyon*, *Cladophora*, *Oedogonium*, *Vaucheria*, *Chara*, *Ectocarpus* and *Polysiphonia*.

Study of different types of Lichen specimens.

Microscopic preparation and study of following fungal materials : *Albugo*, *Phyllactinia*, *Morchella*, *Penicillium*, *Ustilago*, *Agaricus*, *Puccinia* and *Alternaria*.

Study of some locally available materials showing plant diseases caused by Viruses, Mycoplasma, Bacteria and Fungi in field/ laboratory. Yellow vein mosaic of Bhindi, Little leaf of *Solanum melongena* (Brinjal), Citrus canker, Green ear disease of bajra, Rust and Smut of wheat and White rust of crucifers.

GROUP II

Study of external and internal morphology and microscopic preparations of following Bryophytes :

Riccia, *Marchantia*, *Plagiochasma*, *Pellia*, *Anthoceros*, *Sphagnum* and *Polytrichum*.

Microscopic examination of fossil slide specimens/ photographs: *Rhynia* and *Williamsonia*.

Temporary, double stained microscopic preparations and study of stem/ rhizome, anatomy of following pteridophytes: *Psilotum*, *Lycopodium*, *Selaginella*, *Equisetum* and *Marsilea*. Study of temporary, single stained microscopic preparation of the following : Cone of *Lycopodium*, *Selaginella* and *Equisetum*. Petiole, Root and Sporocarp of *Marsilea*; Rhizophore and *Selaginella*.

Temporary, double stained microscopic preparations of T.S., T.L.S. and R.L.S. of stem of *Pinus* and *Ephedra* and T.S. Leaflet and Rachis of *Cycas* and needle of *Pinus*, T.S. of normal and coralloid roots of *Cycas*. Microscopic preparations of male cone of *Pinus* and male and female cones of *Ephedra*. Study of male cone and megasporophyll of *Cycas*.

MARKING SCHEME

There shall be a practical examination of five hours duration and the distribution of marks shall be as follows:

	Students	
	Regular	Ex
1. A double stained section of plant part either of Pteridophyte or Gymnosperm glycerine mount	10	12
2. Minor preparation of Pteridophyte or Gymnosperm (not covered in Q.1)	5	10
3. Preparation and mounting of the part of :		
(a) A Bryophyte	5	5
(b) A Fungus	5	5
(c) An Alga	5	5
(d) Bacteria	5	3
4. Spots : Seven		
(a) One from each group (Algae, Lichen, Bryophytes, Fungi, Fossil, Pteridophytes, Gymnosperms).	21	21
(b) One microbiological experiment for comments.	4	4
5. Viva-Voce.	10	10
6. Practical records	5	-
Total	75	75