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lecture No: 13

Date: 10.12.2020

B.Sc. PART I(H)  
PAPER - I

### CORE CONCEPT OF

Group-A, Algae

Anabaena II:

Anabaena reproduce asexually by following methods —  
The akinetes are produced in mature colonies.

They are formed in unfavourable conditions. They are also called arthospore or resting spore. They are penetrating bodies.

In favorable condition they directly or indirectly giving rise to new filaments. The contents of akinete divide into bits prior to germination.

Heterocyst — Cell divide transversely and form (2-4) celled hormogones. These hormogones come out by bursting the thick wall of heterocyst and germination occurs to give rise to new trichome.

significance —

Anabaena and Azolla have formed a symbiotic relationship in which the cyanobacterium receives carbon and nitrogen sources from the plant in exchange for fixed nitrogen. This relationship is useful to humans in production of food, especially in the fertilization of rice paddies.

Anabaena perform oxygenic photosynthesis very similar to that of eukaryotic plant and algae by utilizing water as a reductant source consequently producing molecular oxygen.

Anabaena provides a model for the study of gene differentiation in the formation of heterocyst. The recent sequencing of the genome of anabaena, species strain PCC 7120 is yet another step towards understanding this process.