DEPARTMENT OF BOTANY
D.B. COLLEGE, JAINAGAR
L.N.M.U. DARBHANGA (BIHAR)

BY: DR. RANJANA
ASST. PROFESSOR
(GUEST TEACHER)

Lecture No: 11

Date: 09.12.2020
B.Sc. PART I (H)
PAPER - I

CORE CONCEPT OF
Group - A, Algae
Life-cycle of Anabaena
Systematic position,
Prokaryota (Bacteria)
Cyanobacteria
Cyanophyta (Cyanophyceae)
Nostocales
Nostocaceae
Anabaena.

Occurrence: This is free-floating watery alga. It is found almost in north east side of Indian paddy-field. Some Sp. of Anabaena are endophytic, and some are found the roots of higher plant as roots of Azolla and cycas.

Structure: Anabaena is a genus filamentous cyanobacteria and blue-green algae.
It is found as plankton. It is known for its nitrogen fixing abilities.
They form symbiotic relationship with certain plants, such as

the mosquito ferns.
Some species of anabaena are endophytes. They live in the roots of cycas and Azolla. Anabaena are ~~f~~ beaded form, chained and rounded or egg-shaped cells made. Large thick-walled cells are present in trichome. these are heterocyst.

Reproduction: These are —
1. Heterocyst: A heterocyst is a differentiated cyanobacterial cell that carries out nitrogen fixation. The heterocyst function as the site for nitrogen fixation under aerobic conditions. They are formed in response to a lack of fixed nitrogen (NH_4 or NO_3) They contain only photosystem I, which enable them to carry out photophosphorylation and ATP regeneration. These changes provide the appropriate conditions for the function of oxygen sensitive nitrogenase. Heterocyst are of some shape as of vegetative cell and are mutully interdependent.