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B.Sc. PART I SUB/GEN

CORE CONCEPT OF Theory Group-A, microbiology.

Flagella — On the basis of number and arrangement of flagella, bacteria can be divided into —

- (i) monotrichous — One flagellum at one pole (e.g. vibrio)
- (ii) lophotrichous — 2 or more flagella at one pole.
- (iii) Amphitrichous — 2 or more flagella at both poles.
- (iv) Peritrichous — Flagella present all over the body.
- (v) Atrichous — No flagella.

The flagellum is composed of a protein called flagellin. The bacterial flagellum looks 9+2 arrangement. Pili — pili are minute hair like appendages and work as the organelles of attachment. They are composed of a protein called pillin.

Nutrition: Depending upon the mode of nutrition, bacteria may be heterotrophic or autotrophic.

1. Heterotrophic bacteria — They

obtain food ready made from other sources. They are divided into—

(a) Saprophytic — These live on decaying or dead organic matters e.g. *Clostridium botulinum*.

(b) Parasitic — These live on or within the living organisms both plants and animal e.g. *Bacillus tetani*, pathogenic to man.

(c) Symbiotic — These live in association with other organism with mutual benefits e.g. *Rhizobium* sp.

2. Autotrophic Bacteria — These are able to synthesize their own food. They are of two types—

(a) Photosynthetic — They utilize light energy in the manufacture of carbohydrate. No free O_2 is liberated as a by product. Hydrogen is provided by donor substances other than water. Hydrogen sulphide is the source of Hydrogen. So the by product is sulphur and not oxygen. The common photosynthetic bacteria are purple sulphur bacteria and green sulphur bacteria.