



# **SNS COLLEGE OF ENGINEERING**

**(An Autonomous Institution)**

**COIMBATORE-107**

**Accredited by NBA-AICTE and Accredited by NAAC – UGC with A+ Grade  
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai**



## **19BY701 / Biology For Engineers IV YEAR / VII SEMESTER UNIT-I: INTRODUCTION TO LIFE**

**Nucleic acids vitamins and enzymes-genes and chromosome**



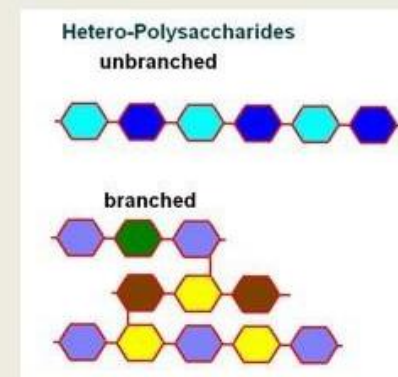
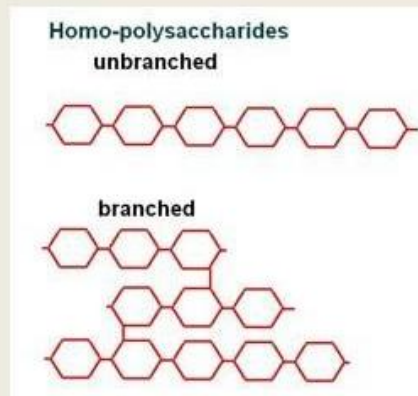
## POLYSACCHARIDES

- ✓ KNOWN AS GLYCANS
- ✓ REPEATING MONOSACCHARIDE UNITS CONNECTED BY GLYCOSIDIC BONDS
- ✓ ALMOST INSOLUBLE
- ✓ NOT SWEET
- ✓ IDEAL STORAGE AND STRUCTURAL COMPONENTS
- ✓ 2 TYPES –

a) **HOMOPOLYSACCHARIDES**  
( ONLY ONE TYPE OF MONOSACCHARIDE MONOMERS )

**STARCH, GLYCOGEN, CELLULOSE**

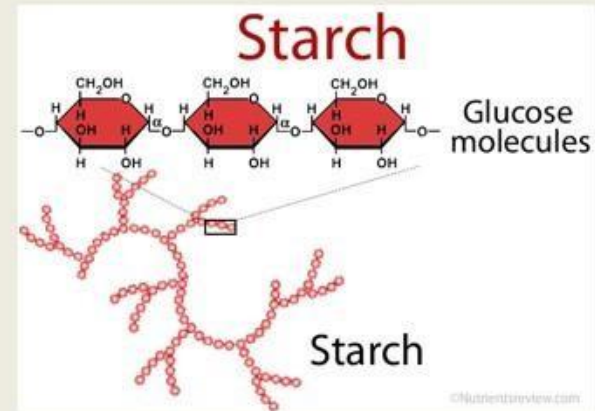
b) **HETAROPOLYSACCHARIDES**  
(CONDENSATION OF 2 OR MORE TYPES OF MONOSACCHARIDES)  
**PEPTIDOGLYCAN, HYALURONIC ACID, AGAR, CHITIN**



## STORAGE POLYSACCHARIDES

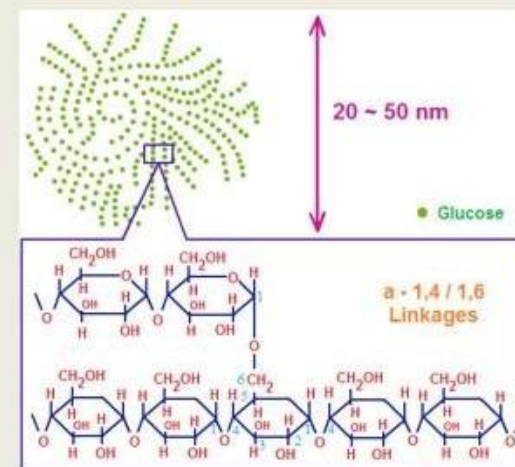
**STARCH** = AMYLOSE + AMYLOPECTIN

- CARBOHYDRATE RESERVE OF PLANTS
- IMPORTANT DIETARY SOURCE FOR ANIMAL
- HOOPOLYMER OF GLUCOSE : GLUCAN



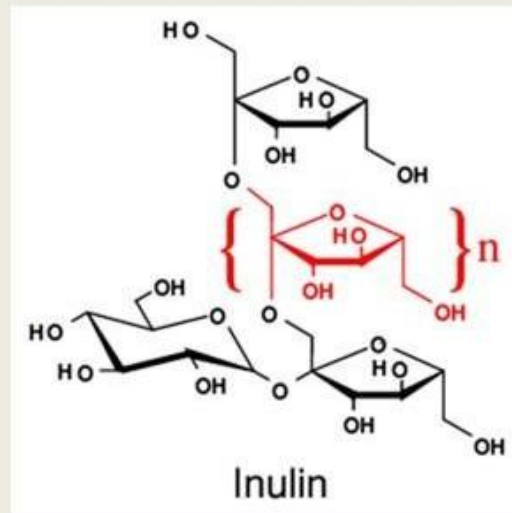
## GLYCOGEN

- CARBOHYDRATE RESERVE IN ANIMAL : ANIMAL STARCH
- HIGH CONCENTRATION IN LIVER, MUSCLE , BRAIN
- MADE UP OF GLUCOSE UNIT



## INULIN

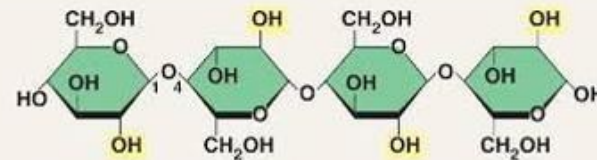
- POLYMER OF FRUCTOSE : FRUCTOSAN
- FOUND IN DAHLIA, GARLIC, ONION etc
- NOT REDAILY METABOLISED IN HUMAN BODY
- READILY FILTERED THROUGH THE KIDNEY; USED FOR KIDNEY FUNCTION TEST



## STRUCTURAL POLYSACCHARIDES

### CELLULOSE

- MOST ABUNDANT ORGANIC SUBSTANCE IN PLANT KINGDOM
- PREDOMINANT CONSTITUENT OF PLANT CELL WALL
- TOTALLY ABSENT IN ANIMALS



Cellulose: 1-4 linkage of  $\beta$  glucose monomers

### CHITIN

- SECOND MOST ABUNDANT ORGANIC SUBSTANCE
- COMPLEX CARBOHYDRATE OF HETAROPOLYSACCHARIDE
- FOUND IN INSECTS ,PROVIDE STRENGTH AND ELASTICITY





# RECAP....



# ...THANK YOU