

"Bringing Excellence to Students"



Handwritten Notes On

CARBOHYDRATES













Carpohydrates
=> all ca(H2O)y aren't carbs
non-carbohydrates (eg, Rhamnose (EH, 05), deoxyribose (C54,04)
-tchemically defined a shing the first of the stand
or compounds which produce such units on hydroxy ald. /ketone
-> All carbs giving felling's 32 Tollen's Test are reducing.
- All monosacch are reducing.
- on disach, if reducing get of Constituent monosacch are bonded,
- D'and'L' refers to their relation with a particular isomer
of glycera (dehyde
(Two crystalline forms) J. B(mb-423K)
- obtained by crystallization from (250°C)
I The word byzanose / flugnose derived from:
All the about the all a six a looitie and the same to intel-
-) Mutarotation! change in specific rotation value due to inter- conversion
-C-0H -C-0H C-0H
Ho-c- $Ho-c Ho-c-$
-c-0H
-c-0H -c-0H C-0H
H ₂ c-OH H ₂ COH Cab = +19.5 Cab = +19.5
(60.11)
- of Catwhich epimer forms aux ein't specified, assume Cathrese is a crepimer of erythrose.
threose is a czepimer of erythrose.
as cho
HO-E-H H-E-OH H-E-OH
$H - c - oH$ $H - c - oH$ $H_2 c - oH$ $H_2 c - oH$
-> Preprof alucose:
(a) from ficrose! (a) Heal Hosoy) glu + fruct
(b) commercial method (from starch):
(C6 450c) + nH20 H2 2024 2020 20 C6 H206
(b) commercial method (from starch): (C6 4505) At nH20 HP (Starch /cellulose)

x's of guesse glucose (n-Hexane) (higgeots that all 6 carbons are linearly arranged) @ 1xn of old. gyp. I hydroxylamine, C5H11O5-CH=N-OH) (confism C541105-CH6 Calleose HCN C541105-CH CN (cyanohydrin) CHO (CHOH) COOH mildo.A. indicates @ of ald gip as (eg B82) را (۱۹۱۷) بن CHZOH CHZOH (alucosonic acid) (4) CHO Acetylation (CH-OCOCHS (CHOH)4 on diffications (Aeetic anhydride) CH204 CH2-OCOCH3 (E) CHO COOH KHOH)4 inclicates @ of COOPED: HNO3 (CHOH) H (CHOH)4 a l'alcohol grip. COOH CH2 OH CHOOM Saccharic aluconit 6 alucos de form acid one indicates CH20H D que cose glucopyranoside) (B-Da methyl a-D gree-CHO form -ci Phenylhy deazine: 3 mots/eg of Ph-hydraine alucose reacts HC = 0HC=NNHGH5 Ph-MY H-6-0H H2NNHC6HBringing ECTENCTO Studen (Oxion) (CHOH)2 Milicose Ph-hydrones 426-0H (glucose) HC=NWHGH5 Yellow crystalline, Spasingly sol. in (Ph-hydrazone -1 test for Dofglucose (alucosazone) Of alucosone) Disacch: Done -) Sucrose (d-Dglu+B-D fruct) -) Maltose (d-p, x-p) -> Lactose. (B-D gal, R-Dglu) glu.

— any lose Dstarch a anylopechin anylopeatin any lave → 80 -85·/. -1 15-20 %. probable - water soruble +branched, &->(1,4011-6) - 1 linear, x- 1(1,4) y Thigh -1200-1000 - Iz test (blue-black) V acycogen: Din line, beain muscles anytopectin but branching T) -) also e in yeast, fungi (Rest Done) Amino acids: Depending on position of NH2 Sth wat cook gip - Proteins - X A. : sweet), tyrosine was first obtained from cheese (tyros: cheese) How to Remember Amino structues: — H =(×) 1)(x)-H 2)(x)-CH3 (glycine) (Alanine). (Valine) (Deucine) 6 CH2-0H (staleucine) (inverted L) 4cin 1 line (x)
(Methionine) (Cysteine) The Scortz (Aspargine) (Glutamine) (Phenylalanine NH2 (7) NHZ NH (x) (X) (almost 3'AGI) (Leainine) (hysine) (2/L's)

(fust Remember) HN -(Redline) a head of all) (Histicline) Tryptoplan) GAVE LEST, THRE CAM AGE AGE, PLATY Helmeinths) * Proline to be remembered) Acids. (Type, s-containing essential) (so all essential) Advanced/Ahead non-essential) M>C (x-betically) (so, essential) (PLATY Helminths) (We LIT) (MY) (we lit my flaty belmenthes) - essential Exceptions to one letter coole gsine -x · acid — E (x-Retically 3. Glutamic acid - E 4. Aspartic acid -1D/ 5. Glutamine - 9 > R (as A was aldready ysine -, K (as after K, L comes, 4.Ph-043 Mososine - Y PhOH3 = F(as DE aldready used above), Tryptophan - w. Os (as T was aldready used) , w (to follow the feed) (KK) for others, blindly use the 1st letter (also, PLATY , acids and desiratives and TYRE are exceptions) Exceptions to three leter code (very less): 1. Asolewaine - ALea (Iso can't be used) 2, adutamente ? alnito indicate they are amides) 4. Typrophan. - Trp (aldready learnt in Trp operon) Lif Cat it. (f Got it)/

Chemical Properties	(Show exts of NHz, -coop and las both)
	(Show 1xhs of -NH2, -coop and las 60th) NAOH (acid-base) R-CH2-coopa NH2
	cary Hall > H3N-CH-COOC2H5 MON H2N-CH-COOC2H5
R-CH NH2	CBa(OH/2/A) H2N-CH2 (Amine)
(amino areid)	L'ALHY R-CH CH2OH (amino-alcohol)
	Mekylation R-CH COOH (an-methyl desivative)
	Acetylation R-CH_COOH IN-acetylaesivative,
	HNOZ R-CH COOH (X-hydroxy acid)
	HCL R-CH COOH
	PUS R-CH cocl (aminoacid chloride),
Action of heat on de	iff. types of A.As;
WHIH OHOC	120/2 mot of AA to form cyclic amides NH-C NH-C
R-CH COOH HHN	"Bringing Excellence to Students" $R - CH - R + 2H_2O$
eg: R = H CH2-NH-CO	L'Aiketo fiberazine.
gycine A CO NH -CH	Diketo piperazine.
2) B A.A: (lose a mote	A > au — cu coroH
NH2 H heobeionic	= acid) (Acrylic acid)
CH3-CH-CH-CH-CH-CH-	-NH3 (Rotonic acid)
(B-a-butyric acc 3 r- AA and SAA _	d)
eg: CH2-CH2-CO	A) PONH
NH(H OH)	
(r-amino butylic as	
CH2-CH2-CH2 N'Hath	ADOFFICIAL (EXAMSROAD (EXAMSROAD Valerolactum)

Amino acido: usually colourless, crystaline solids water solublo, ligh melting solids, behave as salts (rather as acid/omides/clue to existence un zwitter ion form most naturally occurry A. A. de 'L' form, represented by writing NHZ grp of LHS Methods of Prep of A.A: 1 Amination of x-halo acids eg: Conc. NH3 WHO OH + NHyce (Alanine) (aka «-amino propuionic acid) (Hearnine Mura & - amino property of property that preform of glycine:

(K-clacetic acid)

(Amm. salt of glycine) (Amm. salt of gly cine). cu,co3 (H2N CH2 COO) 2 CH + (NH4) 2003 cus] + glycine (blue needles on cooling) 3 Gabriel Phthalimicle synthesis: CLOH 2NH3 (CH2 HO) (C (pthallicació) (potassium phthalamide) hydrolysis H2N-CH2-E-OH + C2H5-OH 4) Strecker synthesis (from aldebyde) Students Cyanolydu'n) -H20 NH2 hyd. (glycine / (5) from natural proteins amino acid) aithersoy mix of esteri-, mix of sautoclave, d-A-A. fication esters Proteins. seperation via fractional volistillation (XA.A.) Etydofinalivival Profesties of A.A. (Physical) 1) Colombess, crystalline, sweet taste, mest via decomposition @>2000. soluble in water but insoluble in organic solvents. 2) In proteins, mostly L-conformation of A.A. found. 3 on neutral medium, inner salt formed aka bipolar ion/zwitter Which is way - high melting solids (-: charged, e'onic) MSROADOFFICIAL 🤕 EXAMSROAD 🧿 EXAMSROAD 💟 EXAMSROAD

Proteins: (word proteios: primary l'offrime umportance)
peptide linkage: H2N-CH2-COOH + H2N-CH-COOH -Cgycine) CH3 (Alanine) H2N-CH2-CONH-CH-COE (Glycy1alanine)[aly_Ala Destining various levels of structures! -> & - helix (all possible H-bonding b) adj amides by cailing (RHS) (intramolecular) (NHz and co) --- B- pleated sheath -) Fibrous '(inter-molecular H-bonding) (chains Hel to each other held by-s-s- and -H bond) (insoluble cheration, myosin)

Loboular Vanderwaals, (chains coil asound to give spherical shape) (soluble)
Electrostatic (Insulin, albumins) 4 -> Two ore more chains & subunits. (way of arrangement of My structure. * Hb - 574 amino acids (Composition (narmally): S(1./.) _ Con Hsad Normal Hb: C (60-531/1) SCA! Hb -> Fe 0 (23-25/1) VHITPEEK VHITPVEK ~(16-17/1) T4 → I. H(6-7.1/) nucleic acids - P (lembember) (automatically ~) (we hit Peek) native protein: Biologically active protein Denaturation: C (f) examsroadofficial (examsroad (examsroad v examsroad) examsroad (examsroad)