



**MALD GOVERNMENT DEGREE COLLEGE
GADWAL, JOGULAMBA GADWAL DIST. 509125
AFFILIATED PALAMURU UNIVERSITY
RE-ACCREDITED BY NAAC- B GRADE**



DEPARTMENT OF BOTANY

**COACHING FOR M.SC BOTANY AND OTHER
ENTRANCE EXAMS**

ACADEMIC YEAR: 2018-19

28.02.2019.

Meeting NO. 10.

A staff meeting among Botany staff was held at Dept. at 3:00 PM.

The following members involved in the meeting present.




Sarvasri

1. G. Rajendar
2. M. Ravi Kumar
3. G. Ganesh.

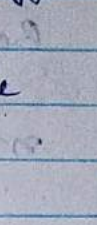
1. The members discussed about upcoming internal Exams, collection of assignments and Q.P preparation, etc.

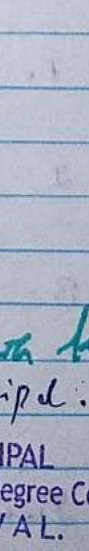
2. To start P.G and other entrance coaching classes for final year students.

Signatures:

1. G. Rajendar. 
2. M. Ravi Kumar. 
3. G. Ganesh. 

Incharge


IN CHARGE
Dept. of Botany
M.A.L.D. GASC, Gadwal
Kamra Gadwal Dist-5094


Principal.

PRINCIPAL
M.A.L.D. Govt. Degree College
GADWAL.

MALD GDC GADWAL JOGULAMBA GADWAL DIST
DEPARTMENT OF BOTANY
PG AND OTHER COMPETITIVE EXAMS
AY:2018-19

Sl.No	ROLL NUMBERS	Student Name	Father's Name	Caste	Sex
1	16-03-3024-445-501	A Ashok	A Thimmappa	SC	M
2	16-03-3024-445-503	Anand	Jeevaranam	SC	M
3	16-03-3024-445-504	Anandh	Savaranna	SC	M
4	16-03-3024-445-505	B Aravind Kumar	B Ashappa	BC-D	M
5	16-03-3024-445-506	B Jayaramudu	B Venugopal	BC-A	M
6	16-03-3024-445-509	Boya Radha	Boya Venkanna	BC-A	F
7	16-03-3024-445-510	B Parudra Ramudu	Boya Venkanna	BC-A	M
8	16-03-3024-445-511	B Ramudu	B Vasanna	BC-D	M
9	16-03-3024-445-512	B Ranjit Kumar	B Ravi Kumar	SC	M
10	16-03-3024-445-513	B Sharada	B Mahanandi	BC-D	F
11	16-03-3024-445-515	B Thinnamma	B Krishniah	BC-A	F
12	16-03-3024-445-516	Chakkali Srinivasulu	C Venkatramudu	BC-A	M
13	16-03-3024-445-519	G Sharada	G Narasimhulu	SC	F
14	16-03-3024-445-521	Karicondalu Hysavathi	Narasimhulu	BC-B	F
15	16-03-3024-445-526	K Parusharamudu	K Kisanna	BC-B	M
16	16-03-3024-445-530	Laxman	Mareppa	SC	M
17	16-03-3024-445-534	M Khatriya Begum	M Fakrudin	BC-E	F
18	16-03-3024-445-539	Prashanthi	Kistanna	SC	F
19	16-03-3024-445-540	P Revathi	P Suri Babu	BC-D	F
20	16-03-3024-445-544	Repalle Sheelaji	R Surender	SC	F
21	16-03-3024-445-545	S Kavitha	Venkatanna	SC	F
22	16-03-3024-445-546	S Lavanya	S Chandramouli	BC-B	F
23	16-03-3024-445-549	Tharan	Ramulu Naik	ST	M
24	16-03-3024-445-558	V Kavitha	V Venkataswarbu	BC-B	F
25	3024-13-445-532	T Madhusudan Reddy	T. Maheshwer Reddy	OC	M
26	16-03-3024-572-001	Amosh	Samel	SC	M
27	16-03-3024-572-004	B Akshaykumar	B Parushotam	BC-B	M
28	16-03-3024-572-005	B Srinu	B Ramudu	BC-D	M
29	16-03-3024-572-014	S Jyothna	S Janappa	SC	F
30	16-03-3024-572-018	S Rashna	S Abdul Razak	BC-E	F
31	16-03-3024-572-019	U Yashoda	U Chenna Madakal	BC-D	F

W.G.
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MALD GASC Gadwal
Jogulamba Gadwal Dist-509104

Botany
Study Material
for
M.Sc. Entrance,
NET, SET & other
Competitive Exams
— Rajendar Gubba

ಪ್ರಕಾಶಕ
ಅಧ್ಯಯನ
Photosynthesis

Dept. of Botany
H.A.L.D. Govt. Degree College,
G A D W A B - 509 125

Photosynthesis



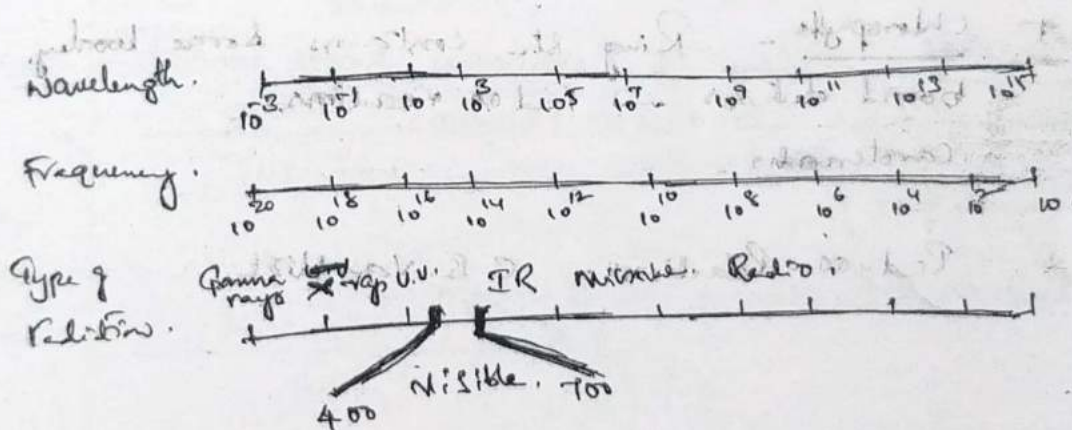
- Using solar energy to oxidise water, to reduce CO_2
- Assimilatory Energy → Carbon fixation
Thylakoids → Stroma

Light as Particle or a wave. $3 \times 10^8 \text{ m/sec}$.

→ 1. wave length, 2. Frequency. $c = \lambda \nu$.

→ photon - quantum. Speed of the wave.

Energy $E = h\nu$
Planck's constant $6.626 \times 10^{-34} \text{ J/s}$.

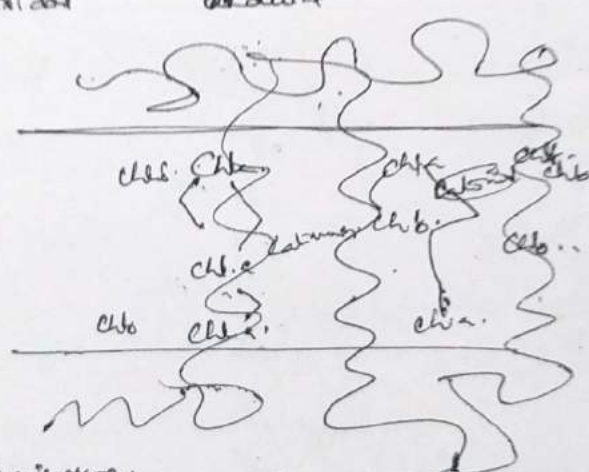


The absorption spectrum for a particular substance in a non absorbing solvent can be determined by Spectrophotometer.

113
7.4

Oxygen-evolving organisms have 'a' photosystems
 * Emerson: Quantum yield = Red drop = long
 greater than 680 nm.
 enhancement effect = O_2 (680 nm)
 blue, strong blue photo = 680 nm =

→ PSII PSII 'Z' scheme.
 > 680 nm = 680
 strong strong.
 reductant oxidant. → Each can antenna protein
 NADP^+ .. → " " photochemical
 Weak Weak Reaction center
 oxidant reductant



3 helical
 regions
 15 - a, b
 constant

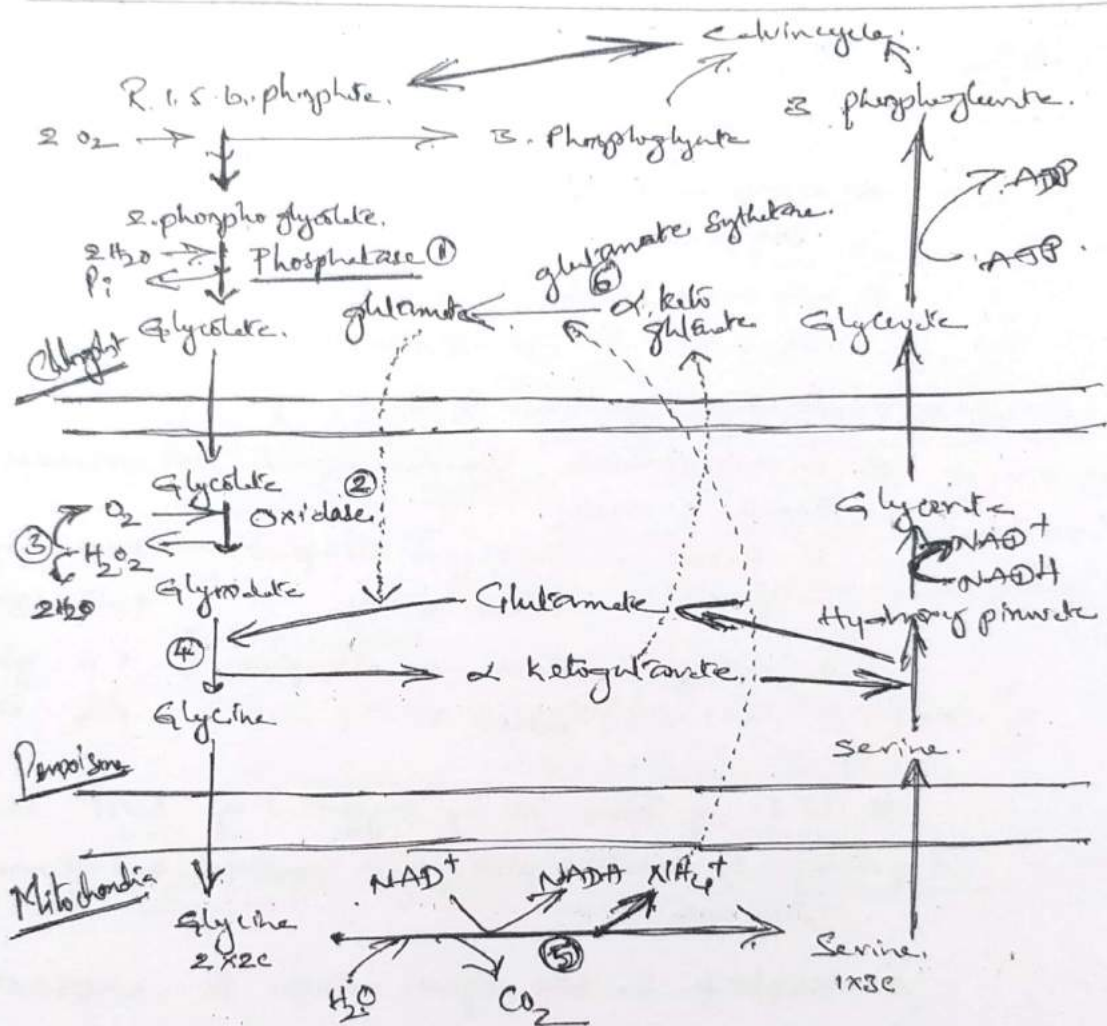
electron microscopy
 +
 electron crystallography.

LHC II Protein

Seefeld et al.

Resonance transfer =

Reath at 680.
 Constant order → chl b → chl a.



- ① Specific chloroplast phosphatase.
- ② FMN dependent Oxidase - Glycolate oxidase.
- ③ Catalase.
- ④ Transamination - amino donor - glutamate
Glyoxalate → A.A. glycine.
- ⑤ Glycine decarboxylase (Multi Enzyme) - Catalyses, glycine → oxidised → Serine.
↓
Complex.

Matrix of plant mitochondria. 4 proteins -

- H - lipamide containing polypeptide.
- P - homodimeric pyridoxal phosphate carrying protein.
- L - a flavin dependent
- L - FAD - carrying protein.

శ్వాసక్రియ

Dept. of Botany
19.A.L.D. Govt. Degree College
G A D W A B - 500 129

Respiration

the cost of $4H^+$ \rightarrow 1 ATP.

③

* External NADH - passes only II & IV Complexes so

6 H^+ \rightarrow 1.5 ATP.

Matrix NADH - I, III, IV \rightarrow 10 H^+ \rightarrow 2.5 ATP.

Glycolysis - 2 NADH \rightarrow 1.5 ATP $\times 2 \Rightarrow$ 3 ATP

Substrate level $2 \times 2 \Rightarrow$ 4 ATP

Krebs cycle 4 NADH, 2.5 ATP $\times 4 \times 2 \Rightarrow$ 20 ATP

Substrate level $1 \times 2 \Rightarrow$ 2 ATP

1 $FADH_2$ - 1.5 ATP $\times 2 \Rightarrow$ 3 ATP

32 ATP

$$\Delta P = \Delta E - 59 \Delta p^H$$

ΔP = proton motive force Δp^H

ΔE = electric transmembrane potential component

Δp^H = chemical-potential component.

$\Delta E = E_{\text{inside}} - E_{\text{outside}}$

$\Delta p^H = p^H_{\text{inside}} - p^H_{\text{outside}}$

$6H^+$ n/6

$22H^+$ n/22

$12H^+$ n/12

* due to e^- transport to water O_2 -
 H^+ are transported to space from matrix hence
 ΔE = become negative.

* How e^- transport & proton transport is coupled
is not known in all the cases.

N₂ Assimilation

పత్రజల

సాంకేతికము

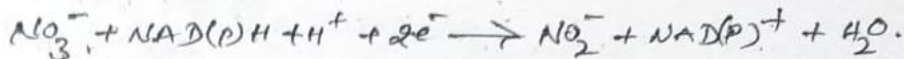
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B.A.L.D. Govt. Degree College
B.A.D.W.A.L. 2011-12

Nitrate assimilation

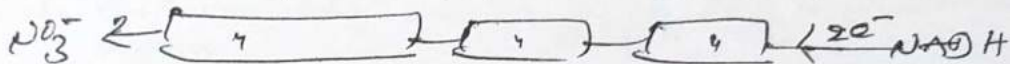
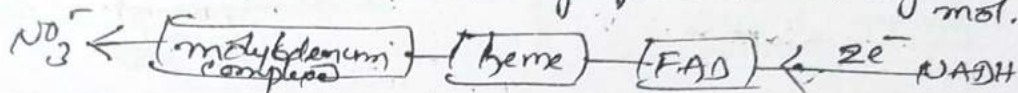
①

① Nitrate reductase -



2. Identical subunits

Each - three prosthetic groups. & pterin organic mol.



Nitroninon

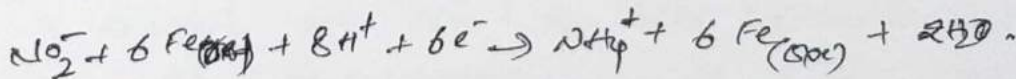
e. teroninsab.

Regulation of Nitrate reductase by Nitrite, light and carbohydrate.

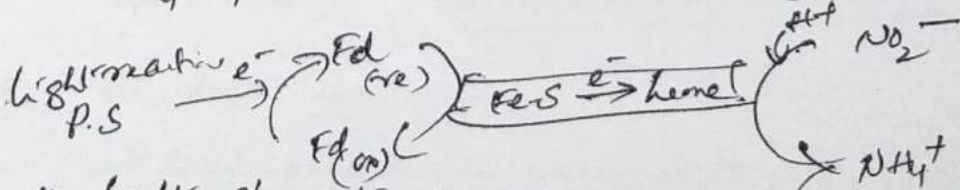
② darkness & night = opening nitrite donation. i.e. Repression.

② Nitrite reductase -

* Potentially toxic ion so immediately trans- port to cyto chloroplast (leaves) plant (roots) to form Ammonium.



* Single polypeptide chain - 2 prosthetic group Fe₄S₄ cluster and a specialized heme.



* Light & Nitrate inducer -

Asparagine & glutamine represses.

Phytochrome

①

A blue protein pigment, etiolation

Red light - 650-680 nm

Far Red - 710-740 nm.

Excitation of -

Germination of lettuce seeds is stimulated by Red
or inhibited by far red.

1. Photo-reversibility and its relation ship to phytochrome response
2. Structure of phytochrome, its synthesis and assembly (interconversion) of two main forms of phytochrome Pr, Pfr.
3. The phytochrome gene family.

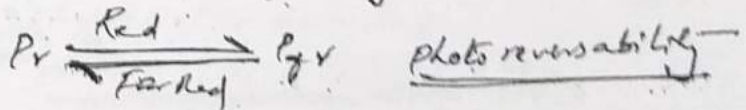


Photo-stationary state -

Pr - red light & absorbance of Pr is 50000, Pfr - red light & absorbance of Pfr is 20000. At 25°C. Pfr is 20000 and Pr is 50000.

Pfr - far red light & absorbance of Pfr is 50000, Pr - far red light & absorbance of Pr is 20000.

3. At equilibrium of photo-stationary state

Pfr is 20000, Pr is 50000. Equilibrium of photo-stationary state

* Blue light also.

- Short lived phytochrome intermediates -

$Pr \Rightarrow Pfr$ is not a single step.

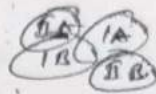
* Pfr is the physiologically active form of phytochrome.

- In Arabidopsis - they are unable to synthesize phytochrome.

* In wild type seedlings, hypocotyl seedlings elongation is strictly inhibited by white light.

* When grown under continuous white light (deprived of red, blue) mutant seedlings with long hypocotyl were discovered and named as hy mutants hy1, hy2,

* Phytochrome - Dimer - Two polypeptides.
250 kda 2 Equal subunits



Each subunit } Chromophore } Holoprotein
(Polypeptide) } apoprotein } 125 kda

* In higher plants - Chromophore - linear ketopyrrole
* phytochromobilin

Chromophore — Apoprotein

↓
Thio ether linkage to a cysteine residue.

* electron microscopy - X-ray scattering techniques
for structure (Suck et al)

* polypeptide - 2 domains

1. larger N-terminus - 70 kda - attached chromophore
2. smaller C-terminus - 55 kda - 2 domains associated

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DEPARTMENT OF BOTANY

P.G COACHING FOR M.Sc BOTANY ENTRANCE



STUDENTS LISTENING COACHING CLASSES FOR ENTRANCE EXAMS

B.SC LIFE SCIENCES III YEAR AY:2018-19

YEAR	NAME OF THE STUDENTS	ROLL NO	GROUP	ADMITTED COLLEGE AND ADDRESS	ADMITTED INTO
2019	C. SRINIVASULU	16-03-3024-445-516	B.Sc	OUCS, HYD	M.Sc. BOTANY
2019	YASHODA	16-03-3024-572-019	B.Sc	SAROJINI NAIDU VANITHA MAHA VIDYALA, HYD	M.Sc. BOTANY
2019	ANAND	16-03-3024-445-503	B.Sc	UNIVERSITY COLLEGE SCIENCE PU	M.Sc. BOTANY
2019	V. KAVITHA	16-03-3024-445-558	B.Sc	SCHOLARS COLLEGE OF EDUCATION, WANAPARTHY	B.Ed
2019	B.RAMUDU	16-03-3024-445-511	B.Sc	GURUKUL COLLEGE OF EDUCATION, HYD	B.Ed

Q. W. G.
IN CHARGE
Dept. of Botany

**MALD GDC Gadwa
Jogulamba Gadwal Dist-506**



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DEPARTMENT OF BOTANY

**COACHING FOR M.SC BOTANY AND OTHER
ENTRANCE EXAMS**

ACADEMIC YEAR :2019-2020

10.01.2020.

Meeting no. 10

A meeting among the staff members of Botany dept. was held at 4:30 PM.

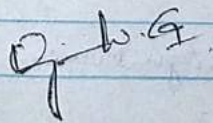

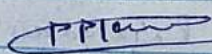
The following staff members were involved in the meeting, present -

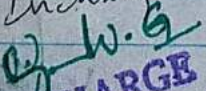
1. Sri. G. Rajendar
2. Sri. G. Ganesh
3. Sri. P. Prashanth Kumar


Resolutions -

1. Conduction of youth day
2. Participation and attending the activities of 26. Jan. Republic Day Celebrations.
3. To grant Enticement loaning for 1st & 2nd year.

Signatures -

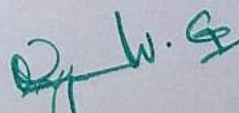
- | | |
|-----------------------|---------------------------------------------------------------------------------------|
| 1. G. Rajendar |  |
| 2. G. Ganesh |  |
| 3. P. Prashanth Kumar |  |

Incharge

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Kamla Garwal Dist-509201

MALD GDC GADWAL JOGULAMBA GADWAL DIST				
DEPARTMENT OF BOTANY				
PG and other competitive exams III YEAR				
AY:2019-20				
Sl.No	ROLL NUMBERS	Student Name	Caste	Sex
1	17-03-3024-445-501	Anjitha	BC-D	F
2	17-03-3024-445-507	B Jayasri	BC-A	F
3	17-03-3024-445-511	C Nareesh	BC-A	M
4	17-03-3024-445-520	Hari Krishna	SC	M
5	17-03-3024-445-526	K Hema	BC-B	F
6	17-03-3024-445-533	M Jayalaxmi	BC-A	F
7	17-03-3024-445-546	S Jaya Raju	SC	M
8	17-03-3024-445-550	T Hemanth Kumar	SC	M
9	17-03-3024-445-553	T Savaramma	BC-D	F
10	17-03-3024-445-558	Wasima Begum	BC-E	F
11	3024-13-445-518	A Gopinath Goud	BC-	M
12	17-03-3024-572-001	Bhaemesh	SC	M
13	17-03-3024-572-002	B Jagadeesh	BC-A	M
14	17-03-3024-572-003	C Nandini	BC-D	F
15	17-03-3024-572-005	K Naveen Kumar	BC-B	M
16	17-03-3024-572-006	K Ramudu	BC-B	M
17	17-03-3024-572-007	K Ranganna	BC-B	M
18	17-03-3024-572-008	K Sandhyarani	BC-B	F
19	17-03-3024-572-009	K Thyaswari	BC-B	F
20	17-03-3024-572-012	Narender	BC-D	M
21	17-03-3024-572-013	Ramanganeyulu	SC	M
22	17-03-3024-572-015	Thokali Dattathreya	BC-A	M


IN CHARGE
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 MALD GASC Gadwa
 Amba Gadwal Dist-50th

MALD GDC GADWAL JOGULAMBA GADWAL DIST

DEPARTMENT OF BOTANY

P.G COACHING FOR M.Sc BOTANY ENTRANCE FOR FINAL YEAR

AY:2019-2020

Sl. No	ROLL NUMBERS	Student Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	17-03-3024-445-501	Anjitha	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
2	17-03-3024-445-507	B Jayasri	P	P	P	P	P	P	P	P	P	AB	P	P	P	P	P	P	P	P	P	P	P	P	P	P	AB	AB	P	P	P	P
3	17-03-3024-445-511	C Naresh	P	P	P	P	AB	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
4	17-03-3024-445-520	Hari Krishna	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	AB	P	P	P	P	P	P	P	P	P	P	P	P
5	17-03-3024-445-526	K Hema	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	AB	AB	P	P	P	P	P	P	P	P	P
6	17-03-3024-445-533	M Jayalaxmi	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	AB	P	P	P	P	P	P	P	P	P	AB	P	P
7	17-03-3024-445-546	S Jaya Raju	P	P	P	P	P	P	P	P	P	P	AB	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
8	17-03-3024-445-550	T Hemanth Kumar	P	P	P	P	AB	P	P	P	P	P	P	P	P	AB	P	P	P	P	P	P	P	P	P	P	P	P	AB	P	P	P
9	17-03-3024-445-553	T Savaramma	P	P	P	P	P	P	P	P	P	AB	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
10	17-03-3024-445-558	Wasima Begum	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
11	3024-13-445-518	A.Gopinath Goud	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
12	17-03-3024-572-001	Bheemesh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
13	17-03-3024-572-002	B Jaga de esh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	AB	P	P	P	P	P
14	17-03-3024-572-003	C Nandini	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
15	17-03-3024-572-005	K Naveen Kumar	P	P	P	P	P	P	P	P	P	P	AB	P	P	P	P	P	P	P	P	P	P	AB	P	P	P	P	P	AB	P	P
16	17-03-3024-572-006	K Ramudu	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	AB	P	P	P	P	P	P	P
17	17-03-3024-572-007	K Ranganna	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
18	17-03-3024-572-008	K Sandhyarani	P	AB	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	AB	P	P	P	P	P	AB	P	P	P	AB	P
19	17-03-3024-572-009	K Thyaswari	P	P	P	P	P	P	P	P	P	P	P	P	AB	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
20	17-03-3024-572-012	Narender	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
21	17-03-3024-572-013	Ramanjaneyulu	P	P	P	AB	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
22	17-03-3024-572-015	Thokali Dattatreya	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

(Signature)
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 Dept. of Botany
 MALD GASC, Gadwa
 Jambha Gadwal Dist-506

Botany
Study Material
for
M.Sc. Entrance,
NET, SET & other
Competitive Exams
— Rajendar Gubba

Phytohormones

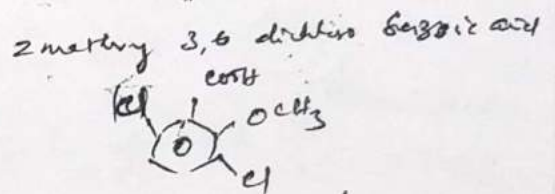
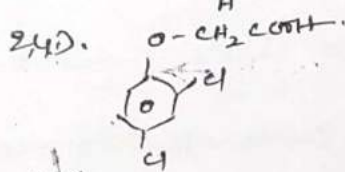
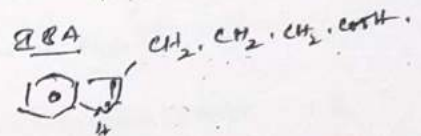
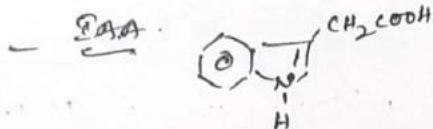
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Phytohormones

①

1. ~~IAA~~ Auxins.

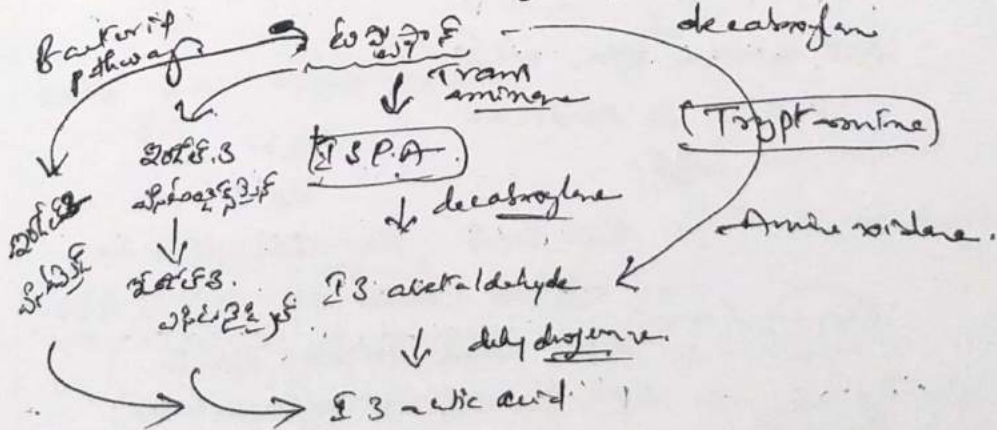
- Bio assay - Avena curvature test.



- IAA synthesized in meristems, young leaves, developing fruits & seeds.

Biosynthesis

Indole-3 Pyruvic acid pathway



Also from - Indole-3-glycerol phosphate.
* Tryptophan independent pathway.

DNA

പ്രയോഗങ്ങൾ

RNA

പ്രയോഗങ്ങൾ

Replication of DNA -

①

- Semi-conservative DNA polymerase

dNTPs.

deoxyribose nucleotide for phosphate

- DNA polymerases - 1st identified is Polymerase I

... Kornberg

- Bacteria polymerase - I, II, III.

- Eukaryotic - $\alpha, \beta, \gamma, \delta, \epsilon$.

✓ mitochondrial DNA replication.

α, δ, ϵ - in dividing cells

β - dividing, non-dividing & repair

SV40

- SV40, yeast, mammalian cells α, δ, ϵ .

- All Synthesize DNA on the 5'-3' prime strand only.

- Replication fork.

circular DNA - 2 forks.

Okazaki fragments - DNA ligase - lagging strand

continuous strand - leading strand

- short fragments of RNA - as primers. Enzyme primase

RNA are removed by RNase-H + polymerase I

* acts as exonuclease

gaps are filled by polymerase δ

2 primers are removed by polymerase δ .

* Sliding clamp proteins & topoisomerase

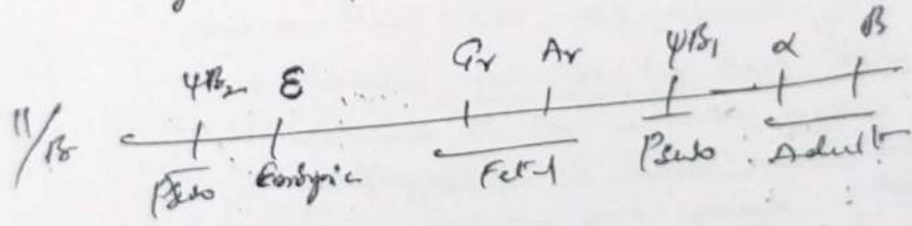
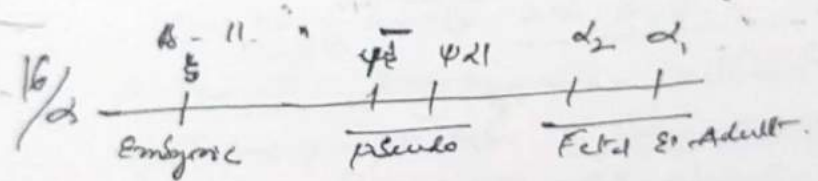
G. RAJENDAR

Junior Lecturer in D.

Gene families, pseudogenes.

- Gene α , multiple copies - Gene families - only in Eukaryotes
- * Gene families - clustered at one region - globin genes
 - dispersed to different chromosomes.
- duplication of original ancestral gene.
- pseudogenes - Non-functional - inactive
 - Ex - human - α globin of each chromosome 2 genes
 - β globin of in inactive stage.

α - 16 chromosome -

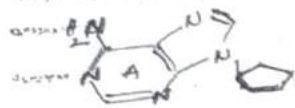


Repetitive DNA sequences

- Estof & Sob.
- Deactivation, reactivation
- $10^5 - 10^6$ times repetitive.
- ① Simple - Sequence DNA ② 5-200 nucleotides. repeats
 - Ex - Drosophila ACAGACT. (1 nucleotide)
- ② Satellite DNA. ③ Long terminal.
- ④ SINE & LINE. (Short/Long interspersed elements)
 - Alu sequence - 300 bp; 10^6 times repeated.

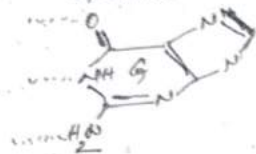
Nucleic acids

Adenine



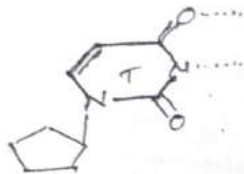
Purines

Guanine

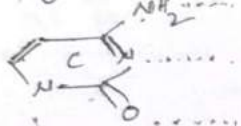


Pyrimidines

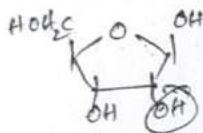
Thymine



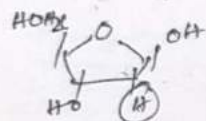
Cytosine



Ribose



Deoxyribose



Sugar + base - Nucleoside

Sugar + base + PO_4 - Nucleotide

LINES - in humans LINE-1, LINE-2

6000 bp
50,000 repeats.

Alu, LINE 3, bothane

* Transposable Elements

RNA Synthesis & processing

①

Transcription in prokaryotes

* mRNA & RNA polymerase are first associated w. E. coli.

RNA polymerase

* 5' to 3' * Primer not require.

* $2\alpha, \beta, \beta', \sigma$ - 5 subunits - polypeptide chains.

loosely attached to remaining.

σ unit - identifying - correct site for transcription initiation.

Core polymerase - $2\alpha, \beta, \beta'$.

* Promoter - DNA sequence - initiation site

(+) Transcription site has 2 sequences upstream... -10, -35 and are called -10, -35 elements.

* Promoter identified by DNA footprinting

determine the site at which proteins bind to DNA or per Maxam-Gilbert method

Partial digestion with DNase.

RNA polymerase binds to promoter. -10 to +20 bp region.
up down.

Transcription method -

σ binds to site. RNA polymerase unwinds approx 15 bp after addition of 10 bp, σ releases and joins ahead.

polymerase continues ahead of σ and remains behind it. Maintaining unwound region of

* About 17 bp.

Termination - in E. coli Simplest. Symmetrical inverted repeats

of GC-rich sequences followed by 4 or more A residues * A-U are weaker so RNA released.

Stable stem loop.

ప్రోటీన్‌ల
సంశ్లేషణ

Protein Bio-
Synthesis

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Ribosome — (≈ approximately)

- * 1st characterized particles detected by ultracentrifugation of cell lysates.
- * 70 S pro, 80 S Eu.
- * 2 Subunits — Each — proteins + rRNA.
- * 20,000 in E. coli
10 millions — in rapidly growing mammalian cells.

pro.	Eu
30S + 50S	1. 40S + 60S.
30S — 16S rRNA + 21 proteins	2. 40S — 18S rRNA + ~ 30 proteins
50S — 23S rRNA + 5S rRNA + 34 proteins	3. 60S — 28S rRNA + 5.8S rRNA + ~ 45 proteins.

- * catalytic activity — RNase P
self splicing enzymes.
- * large subunit — catalyze — able to form peptide bond.
Removal of RNase completely abolish peptide bond formation.
- * 23S rRNA interacts with 3' CCA terminus of tRNA & directly involved in the peptidyl transferase reaction.
- * Ribosome proteins → proper folding of rRNA.

Org of mRNA & Translation of 5' end.

1. Position of initiation of translation in prokaryotes is different.

* Begins at 5' at specific initiation sites.

UTR — 5' Untranslated region — non-coding sequence

Monocistronic Eu — only one poly peptide chain Encoded $\text{ORF} \rightarrow \text{ORF}$

poly — many $\text{ORF} \rightarrow \text{ORF} \rightarrow \text{ORF} \rightarrow \text{ORF}$

Each has distinct initiation site.

(Polycistronic)

* Initiation codes — AUG, GUG (Sometimes in bacteria)

Initiation A-A Met Met (generally Met by GUG)

Met in Bacteria, chloroplast & mitochondria

* Position — Prokaryotic

AGGAGGUUUGACCUAUG

↓ Shine-Dalgarno sequence.

Recognized by 16S rRNA

This position enables translation at 5' of Subunit.

Eukaryotic

Small subunit — searching for 7mG of mRNA and scans AUG sequence

Process of Translation.

Initiation, Elongation, Termination.

Initiation — Both pro, Eukaryotes — binding of Specific — Methionyl tRNA and mRNA to small ribosomal unit.

Protein folding & processing.

Chaperones -

- Proteins that facilitate the folding of other proteins are called chaperones - Ron Laskey. to describe a protein nucleoplamin - required for the assembly of nucleosomes from histone & DNA.
- chaperones catalyze protein folding by assisting self assembly process.
- In the absence of chaperones, unfolded & partially folded polypeptide chains would be unstable with in the cell.
- Chaperones binds to amino terminus of growing polypeptide chain, stabilizing it in an unfolded configuration until synthesis of p.p. chain completed. The completed chain then released from ribosome and is able to fold into its correct 3D configuration.
- chaperones also stabilizes p.p. chain during their transport into subcellular organelles.

Heat shock proteins -

	Pro	Eu.
① Hsp 70	Dna K	Hsc 73 (cytosol) BiP (ER) mHsp 70 (mito) ct Hsp 70 (chroptid)
② Hsp 60	GrpEL	Hsp 60 (mito) Cmp 60 (chroptid)
③ Hsp 90	Hsp G	Hsp 90 (cytosol) ^{Hsp 90 (cytosol)} Grp 74 (ER)
④ TRic	TF55	TRic (cytosol)

* Hsp 70 - during translation; during transport.

2. Prenylation - fatty acid attached to 'S' atoms
i.e. Cysteine, Serine, Thr residues.

3. Palmitoylation - palmitic acid attached to
'S' atom.

GPI anchor - Glycolipid attached to protein.

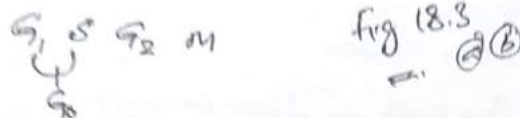
Glycosyl phosphatidylinositol.

	U	C	A	G	
	Phe	Ser	Tyr	Cys	U
U	Phe	Ser	Tyr	Cys	C
	Leu	Ser	stop	stop	A
	Leu	Ser	stop	Tyr	G
	Leu	Pro	His	Arg	U
L	Leu	Pro	His	Arg	C
	Leu	Pro	Gln	Arg	A
	Leu	Pro	Gln	Arg	G
A	Ile	Thr	Asn	Ser	U
	Ile	Thr	Asn	Ser	C
	Ile	Thr	Lys	Arg	A
	Met	Thr	Lys	Arg	G
G	Val	Ala	Asp	Gly	U
	Val	Ala	Asp	Gly	C
	Val	Ala	Glu	Gly	A
	Val	Ala	Glu	Gly	G

Cancer

Relationship of the cell cycle to cancer (587 Rusib) ①

cell differentiation, terminally differentiated cells
self renewal.



Two Hit model for cancer.

ex: Retinoblastoma.

Sporadic - 2 mutations → cause disease

Hereditary - 1 " → cause disease.

Types of cancer

1. Benign tumor, Malignant tumor (metastasis)
circulatory / lymphatic systems.

2. Carcinomas, Sarcomas, Lymphomas | Leukemias
Epithelial connective tissue blood forming ~~tissue~~ cells,
Muscle, Bone, cells of immune
Cartilage, fibrous system.
tissue.

3. according to origin,
Lung & breast carcinomas
fibrosarcomas
Erythroid leukemias.

→ Prostate, breast, lung, colon/rectum.

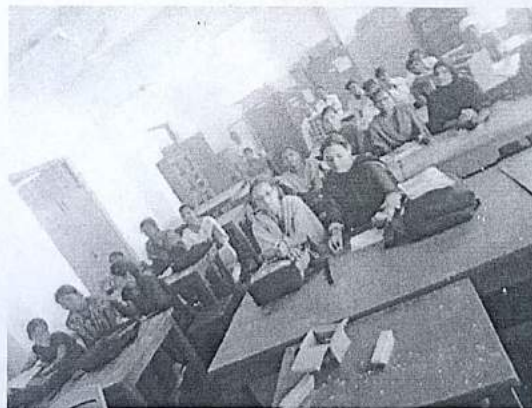
Development of cancer

- X chromosome inactivation.
- Original progenitor cell that give rise to a tumor

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P.G COACHING FOR M.Sc BOTANY ENTRANCE



STUDENTS LISTENING COACHING CLASSES FOR ENTRANCE EXAMS

B.SC LIFE SCIENCES III YEAR

AY: 2019-2020

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PG and B.Ed admitted candidates

YEAR	NAME OF THE STUDENTS	ROLL NO	GROUP	ADMITTED COLLEGE AND ADDRESS	ADMITTED INTO
2020	K. SANDHYA RANI	17-03-3024-572-008	B.Sc	OUCS, HYD	MSc BIO-TECHNOLOGY
2020	C. NANDINI	17-03-3024-572-003	B.Sc	SVM COLLEGE OF EDUCATION, GADWAL	B.Ed
2020	ANJITHA	17-03-3024-445-501	B.Sc	SVM COLLEGE OF EDUCATION, GADWAL	B.Ed
2020	THOKALI DATTATHREYA	17-03-3024-572-015	B.Sc	SVM COLLEGE OF EDUCATION, GADWAL	B.Ed
2020	TAYESHWARI	17-03-3024-572-009	B.Sc	SVM COLLEGE OF EDUCATION, GADWAL	B.Ed
2020	WASIMA BAGUM	17-03-3024-445-558	B.Sc	NAVA BHARATHI COLLEGE OF EDUCATION, PEBBAIR	B.Ed

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