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AIEEA-PGS JRF (Junior Research Fellowship) Coaching Program

PLANT BIOTECHNOLOGY

STUDY PLANNER (Concept build up)

Number	Topic	Revision 1 (Write Date)	Revision 2 (Write Date)
0	Introduction, suggested reading list, approaches		
1	Recombinant DNA technology (Part 1- Enzymes)		
2	Recombinant DNA technology (Part 2- Linker & Adapter, Vector)		
3	Recombinant DNA technology (Part 3- Transgenics)		
4	Recombinant DNA technology (Part 4- Application of Transgenics, Gene revolution & GURT technology)		
5	Tissue culture and Molecular markers (Part 1- Concepts, Suspension culture, Single cell culture)		

6	Tissue culture and Molecular markers (Part 2- Micropropagation, Somaclonal variation, Protoplast culture)		
7	Tissue culture and Molecular markers (Part 3- Somatic embryogenesis, Anther culture, Artificial seed production, Germplasm conservation & secondary metabolite)		
8	Tissue culture and Molecular markers (Part 4- Molecular markers)		
9	DNA replication (Prokaryotes & Eukaryotes)		
10	Transcription		
11	Post transcriptional modification (Basic concepts, Capping, Splicing, Tailing & RNA editing)		
12	Translation (Basic concepts and process)		
13	Operon (lac & trp operon)		
14	Basic techniques in biotechnology		
15	Photosynthesis (Part 1- Chlorophyll, Pigments, Light reaction, C3, C4, CAM & P2 cycle)		
16	Photosynthesis (Part 2- Dark reaction [C3, C4, CAM & C2 cycle], Light & Carbon dioxide compensation point)		
17	Nitrate assimilation		
18	Biological nitrogen fixation and Nitrogen cycle		
19	Enzymology (Part 1- Properties & Classification		

20	Enzymology (Part 2- Kinetics, Inhibition & Regulation)		
21	Lipid metabolism (Part 1- Basic concepts, Types, Beta, Omega and Alpha oxidation)		
22	Lipid metabolism (Part 2- Fatty acid synthesis)		
23	Carbohydrate metabolism (Part 1- Monosaccharides, Disaccharides & Poly saccharides)		
24	Carbohydrate metabolism (Part 2- Glycolysis & Gluconeogenesis)		
25	Carbohydrate metabolism (Part 3- Pentose phosphate pathway, Glyoxylate cycle & TCA)		
26	Carbohydrate metabolism (Part 4- Electron transport system, Glycogen metabolism etc.		
27	Physiology- hormones, vernalization and photoperiodism		
GENERAL AGRICULTURE VIDEO LECTURES			
1	GA_Agronomy		
2	GA_Soil Science		
3	GA_Economics & Extension		
4	GA_Entomology		
5	GA_Agricultural Statistics		
6	GA_Horticulture		

7	GA_Plant Biotechnology		
8	GA_Genetics		
9	GA_Pathology		

- Go through toppers notes for clear understanding and edge over others.
- Clear doubts by available several interactive platforms when needed (Telephone, Whatsapp, Email).
- For better understanding video lectures & reading of suggested books should go in side by side.

STUDY PLANNER (Reading tracker)

Text Book	50 % reading (Write date)	100 % reading (Write date)	1st revision (Write date)	2nd revision (Write date)	3rd revision (Write date)
CORE SUBJECT: PLANT BIOTECHNOLOGY, PLANT PHYSIOLOGY, BIOCHEMISTRY					
1. Plant Physiology: V K Jain / Pandey & Sinha (Pick any one book)					
2. An expanding Horizon- B.D. Singh					
3. Genetics: B.D. Singh					
4. Fundamentals of Biochemistry: J L Jain					
5. Gene cloning & DNA analysis- T.A. Brown					
6. Plant Biotechnology- Slater					
7. Bios Instant Biochemistry: Hames & Hooper					
8. Techniques of Biophysics & Molecular Biology: Pranav Kumar					
GENERAL AGRICULTURE					
1. Nem Raj Sunda					
2. S. R. Kantwa					