

# LIST OF videos for CSIR NET Life Science on iGuruji

## **CELL BIOLOGY MICROBIO and IMMUNOLOGY**

Cell signalling: Hormones and their receptors, cell surface receptor, signaling through Gprotein coupled receptors, signal transduction pathways, second messengers, regulation of signaling pathways, bacterial and plant two-component signaling systems, bacterial chemotaxis and quorum sensing.

1.	signalling key words	Advanced Cell communication
2.	cell signalling part 1	Advanced Cell communication
3.	cell signalling part 2	Advanced Cell communication
4.	cell signalling part 3	Advanced Cell communication
5.	cell signalling part 4	Advanced Cell communication
6.	cell signalling part 5	Advanced Cell communication
7.	cell signalling part 6	Advanced Cell communication
8.	cell signalling part 7 quorum sensing	Advanced Cell communication

nucleus, mitochondria, Golgi bodies, lysosomes, endoplasmic reticulum, peroxisomes, plastids, vacuoles, chloroplast, structure and function of cytoskeleton and its role in motility. Cell division and cell cycle: Mitosis and meiosis, their regulation, steps in cell cycle, and control of cell cycle

9.	ER GOLGI organelle part 1	Advanced CELL structure
10.	ER GOLGI organelle part 2	Advanced CELL structure
11.	ER GOLGI organelle part 3	Advanced CELL structure
12.	ER GOLGI organelle part 4	Advanced CELL structure
13.	cell cycle part 1	Advanced CELL structure
14.	cell cycle part 2	Advanced CELL structure

# LIST OF videos for CSIR NET Life Science on iGuruji

## LIST OF videos for CSIR NET Life Science on iGuruji

15.	cell cycle part 3	Advanced CELL structure
16.	cell cycle part 4	Advanced CELL structure
17.	cell cycle part 5	Advanced CELL structure
18.	cell cycle part 6	Advanced CELL structure
19.	cell cycle part 7	Advanced CELL structure
20.	cytoskeleton part 1	Advanced CELL structure
21.	cytoskeleton part 2	Advanced CELL structure
22.	cytoskeleton part 3	Advanced CELL structure
23.	cytoskeleton part 5	Advanced CELL structure
24.	cytoskeleton part 4	Advanced CELL structure
25.	cytoskeleton part 6	Advanced CELL structure
26.	cell signalling part 5	Advanced CELL structure
27.	membrane part 1	Advanced CELL structure
28.	membrane part 2	Advanced CELL structure
29.	membrane part 3	Advanced CELL structure
30.	membrane part 6	Advanced CELL structure
31.	problem discussion cell membrane 1	Advanced CELL structure
32.	problem discussion cell membrane 2	Advanced CELL structure
33.	membrane part 4	Advanced CELL structure
34.	membrane part 5	Advanced CELL structure

## LIST OF videos for CSIR NET Life Science on iGuruji

## LIST OF videos for CSIR NET Life Science on iGuruji

<p>general principles of cell communication, cell adhesion and roles of different adhesion molecules, gap junctions, extracellular matrix, integrins, neurotransmission and its regulation.</p> <p>Genetic rearrangements in progenitor cells, oncogenes, tumor suppressor genes, cancer and the cell cycle, virus-induced cancer, metastasis, interaction of cancer cells with normal cells, apoptosis, therapeutic interventions of uncontrolled cell growth</p>		
35.	cell junctions part 1	Advanced CELL structure
36.	cell junctions part 2	Advanced CELL structure
37.	cancer part 1	Advanced CELL structure
38.	cancer part 2	Advanced CELL structure
39.	apoptosis	Advanced CELL structure

<p><b>Innate and adaptive immune system</b> Cells and molecules involved in innate and adaptive immunity, antigens, antigenicity and immunogenicity. B and T cell epitopes, structure and function of antibody molecules. generation of antibody diversity, monoclonal antibodies, antibody engineering, antigen-antibody interactions, MHC molecules, antigen processing and presentation, activation and differentiation of B and T cells, B and T cell receptors, humoral and cell-mediated immune responses, primary and secondary immune modulation, the complement system, Toll-like receptors, cell-mediated effector functions, inflammation, hypersensitivity and autoimmunity</p>		
1.	IMMUNOLOGY PART 1 BASICS	IMMUNO BASICS & TECHNIQUES
2.	IMMUNOLOGY PART 2 innate immunity	IMMUNO BASICS & TECHNIQUES
3.	Immunology part 3 immune cells	IMMUNO BASICS & TECHNIQUES
4.	Immunology part 4 bone marrow thymus	IMMUNO BASICS & TECHNIQUES
5.	Immunology part 5 spleen lymph nodes	IMMUNO BASICS & TECHNIQUES
6.	Immunology part 6 antigen	IMMUNO BASICS & TECHNIQUES
7.	Immunology part 7 antibody structure	IMMUNO BASICS & TECHNIQUES

## LIST OF videos for CSIR NET Life Science on iGuruji

## LIST OF videos for CSIR NET Life Science on iGuruji

8.	Immunology part 8 antibody types and MAB	IMMUNO BASICS & TECHNIQUES
9.	Immunology part 9 complement system	IMMUNO BASICS & TECHNIQUES
10.	Immunology part 10 HSR part 1	IMMUNO BASICS & TECHNIQUES
11.	Immunology part 11 HSR part 2	IMMUNO BASICS & TECHNIQUES
12.	Immunology part 12 Ag Ab interaction 1	IMMUNO BASICS & TECHNIQUES
13.	Immunology part 13 agglutination	IMMUNO BASICS & TECHNIQUES
14.	Immunology part 14 ELISA RIA ELISPOT	IMMUNO BASICS & TECHNIQUES
15.	Immunology part 15 immuno Techniques 2 flow cytometry	IMMUNO BASICS & TECHNIQUES
16.	Immunology part 16 MHC & antigen presentation	IMMUNO BASICS & TECHNIQUES
17.	Immunology part 17 Antibody diversity part 1	IMMUNO BASICS & TECHNIQUES
18.	Immunology part 18 antibody diversity 2	IMMUNO BASICS & TECHNIQUES
19.	immunology part 19 B cell development part 1	IMMUNO BASICS & TECHNIQUES
20.	immunology part 20 B cell development part 2	IMMUNO BASICS & TECHNIQUES
21.	immunology part 21 B cell development part 3 & TCR	IMMUNO BASICS & TECHNIQUES
22.	how to prepare what to prepare	making the study schedule
<b>Microbial Physiology</b> (Growth yield and characteristics, strategies of cell division, stress response) Recognition and entry processes of different pathogens like bacteria,		
23.	MICROBIOLOGY PART 1 BACTERIA	MICROBIAL PHYSIOLOGY
24.	MICROBIOLOGY PART 2 BACTERIAL STRUCTURE	MICROBIAL PHYSIOLOGY
25.	Microbiology class 3 bacterial diversity	MICROBIAL PHYSIOLOGY
26.	MICROBIOLOGY PART 4 Microbial control	MICROBIAL PHYSIOLOGY
27.	media growth dilution	MICROBIAL PHYSIOLOGY
28.	archaea	MICROBIAL PHYSIOLOGY
29.	mycoplasma phytoplasma	MICROBIAL PHYSIOLOGY

## LIST OF videos for CSIR NET Life Science on iGuruji

# LIST OF videos for CSIR NET Life Science on iGuruji

## BIOCHEMISTRY & TOOL TECHNIQUE

Molecular analysis using UV/visible, fluorescence, circular dichroism, NMR and ESR spectroscopy Molecular structure determination using X-ray diffraction and NMR, Molecular analysis using light scattering, different types of mass spectrometry and surface plasma resonance methods.

Visualization of cells and subcellular components by light microscopy, resolving powers of different microscopes, microscopy of living cells, scanning and transmission microscopes, different fixation and staining techniques for EM, freeze-etch and freeze-fracture methods for EM, image processing methods in microscopy.

1.	chromatography part 1	Tools and Techniques
2.	Chromatography part 2	Tools and Techniques
3.	Electrophoresis part 1 basics	Tools and Techniques
4.	Electrophoresis part 2 IEF and zone	Tools and Techniques
5.	Electrophoresis part 3 applications of agarose gel electrophoresis	Tools and Techniques
6.	Electrophoresis part 4 PAGE	Tools and Techniques
7.	centrifugation part 1	Tools and Techniques
8.	centrifugation part 2	Tools and Techniques
9.	centrifugation part 3	Tools and Techniques
10.	centrifugation part 4	Tools and Techniques
11.	spectroscopy part 1	Tools and Techniques
12.	spectroscopy part 2 absorption basics	Tools and Techniques
13.	Spectroscopy fast revision	Tools and Techniques
14.	fluorescence spectroscopy part 1	Tools and Techniques
15.	spectroscopy part 3 application of absorption	Tools and Techniques
16.	fluorescence spectroscopy part 2	Tools and Techniques
17.	protein purification part 1	Tools and Techniques

# LIST OF videos for CSIR NET Life Science on iGuruji

## LIST OF videos for CSIR NET Life Science on iGuruji

18.	protein purification part 2	Tools and Techniques
19.	microscopy 1	Tools and Techniques
20.	microscopy 2	Tools and Techniques
21.	microscopy 3	Tools and Techniques
22.	microscopy 4	Tools and Techniques
23.	microscopy 5	Tools and Techniques

Stablizing interactions (Van der Waals, electrostatic, hydrogen bonding, hydrophobic interaction, etc.).

Principles of biophysical chemistry (pH, buffer, reaction kinetics, thermodynamics, colligative properties).

24.	basics of biochemistry	Biophysical Chemistry
25.	chemical bonds in biology part 1	Biophysical Chemistry
26.	chemical bonds in biology part 2	Biophysical Chemistry
27.	chemical bonds in biology part 3 water	Biophysical Chemistry
28.	Equilibrium constants and kinetics	Biophysical Chemistry
29.	biochemical thermodynamics part 1	Biophysical Chemistry
30.	biochemical thermodynamics part 2	Biophysical Chemistry
31.	biochemistry numerical part 1 biomolecules	Biophysical Chemistry
32.	biochemistry numericals part 2 biomolecules	Biophysical Chemistry

## LIST OF videos for CSIR NET Life Science on iGuruji

## LIST OF videos for CSIR NET Life Science on iGuruji

Conformation of proteins (Ramachandran plot, secondary structure, domains, motif and folds). Stability of proteins		
33.	amino acid names and structure	Protein Chemistry
34.	Protein Structures Part 1 Amino Acid Basics	Protein Chemistry
35.	Protein Structures Part 2 Amino Acid Titration	Protein Chemistry
36.	protein structure part 3 primary structure	Protein Chemistry
37.	protein structure part 4 ramachandran plot	Protein Chemistry
38.	protein structure part 4 ramachandran plot	Protein Chemistry
39.	protein structure part 6 tertiary structure	Protein Chemistry
40.	protein folding part 1	Protein Chemistry
41.	protein folding part 2	Protein Chemistry
42.	protein folding part 3	Protein Chemistry
Principles of catalysis, enzymes and enzyme kinetics, enzyme regulation, mechanism of enzyme catalysis, isozymes		
43.	ENZYME PART 1 INTRODUCTION	Enzyme Kinetics
44.	ENZYME PART 2 PROPERTIES & CLASSIFICATION	Enzyme Kinetics
45.	ENZYME PART 3 KINETIC PROPETIES	Enzyme Kinetics
46.	ENZYME PART 4 DIFFERENT GRAPHS	Enzyme Kinetics
47.	ENZYME PART 5 REVERSIBLE INHIBITIONS	Enzyme Kinetics
48.	advanced ENZYMOLOGY PART 1	Enzyme Kinetics
49.	Haemoglobin and myoglobin structure	Enzyme Kinetics
50.	Haemoglobin and myoglobin kinectics 1	Enzyme Kinetics
51.	Haemoglobin and myoglobin kinectics 2	Enzyme Kinetics

## LIST OF videos for CSIR NET Life Science on iGuruji

## LIST OF videos for CSIR NET Life Science on iGuruji

Bioenergetics, glycolysis, oxidative phosphorylation, coupled reaction, group transfer, biological energy transducers. Metabolism of carbohydrates, lipids, amino acids nucleotides and vitamins.		
52.	carbohydrate Nomenclature	Metabolism and Bioenergetics
53.	CARBOHYDRATE CHEMISTRY Part 1	Metabolism and Bioenergetics
54.	CARBOHYDRATE CHEMISTRY PART 2	Metabolism and Bioenergetics
55.	METABOLISM PART 1 GLYCOLYSIS 1	Metabolism and Bioenergetics
56.	METABOLISM part 2 glycolysis and other hexose metabolism	Metabolism and Bioenergetics
57.	METABOLISM PART 3 gluconeogenesis TCA	Metabolism and Bioenergetics
58.	METABOLISM PART 4 GLYCOGEN METABOLISM	Metabolism and Bioenergetics
59.	METABOLISM PART 5 HMP GLYOXYLATE	Metabolism and Bioenergetics
60.	METABOLISM part 6 lipids part 1	Metabolism and Bioenergetics
61.	METABOLISM PART 7 lipids metabolism part2 lipoproteins	Metabolism and Bioenergetics
62.	METABOLISM part 8 lipid part 3 Beeta oxidation	Metabolism and Bioenergetics
63.	METABOLISM PART 9 LIPID BIOSYNTHESIS	Metabolism and Bioenergetics
64.	METABOLISM PART10 AMINO ACID catabolism	Metabolism and Bioenergetics
65.	METABOLISM PART 11 AMINO ACID BIOSYNTHESIS	Metabolism and Bioenergetics
66.	METABOLISM PART 12 Nucleotide metabolism	Metabolism and Bioenergetics
67.	VITAMINS	Metabolism and Bioenergetics
68.	ETS and oxidative phosphorylation part 1	Metabolism and Bioenergetics
69.	ETS and oxidative phosphorylation part 2	Metabolism and Bioenergetics
70.	ETS and oxidative phosphorylation part 3	Metabolism and Bioenergetics
71.	ETS and oxidative phosphorylation part 4	Metabolism and Bioenergetics

## LIST OF videos for CSIR NET Life Science on iGuruji



## LIST OF videos for CSIR NET Life Science on iGuruji

### **GENETICS (Inheritance Biology)**

Mendelian principles : Dominance, segregation, independent assortment.  
Concept of gene : Allele, multiple alleles, pseudoallele, complementation tests  
Extensions of Mendelian principles : Codominance, incomplete dominance, gene interactions, pleiotropy, genomic imprinting, penetrance and expressivity, phenocopy, linkage and crossing over, sex linkage, sex limited and sex influenced characters.

Gene mapping methods : Linkage maps, tetrad analysis, mapping with molecular markers, mapping by using somatic cell hybrids, development of mapping population in plants.

Extra chromosomal inheritance : Inheritance of Mitochondrial and chloroplast genes, maternal inheritance..

1.	GENETICS PART 1 BASICS AND KEY WORDS	Basic Genetics
2.	GENETICS PART 2 foundation	Basic Genetics
3.	GENETICS PART 3 mendel laws and probabilities	Basic Genetics
4.	GENETICS PART 4 pedigree analysis	Basic Genetics
5.	GENETICS PART 5 interaction of genes	Basic Genetics
6.	GENETICS problem solving session 1 1	Basic Genetics
7.	GENETICS problem solving session 1 2	Basic Genetics
8.	GENETICS problem solving session 1 3	Basic Genetics
9.	GENETICS PROBLEM SOLVING SESSION 2	Basic Genetics
10.	GENETICS PROBLEM SOLVING SESSION 3	Basic Genetics
11.	bacterial genetics part 1 basics	Basic Genetics
<b>Gene mapping methods</b> : Linkage maps, tetrad analysis, mapping with molecular markers, mapping by using somatic cell hybrids, development of mapping population in plants.		
12.	GENETICSLINKAGE ANALYSIS PART 1	Genetic mapping
13.	GENETICSLINKAGE ANALYSIS PART 2	Genetic mapping
14.	TETRAD ANALYSIS	Genetic mapping

## LIST OF videos for CSIR NET Life Science on iGuruji

## LIST OF videos for CSIR NET Life Science on iGuruji

15.	GENETICS LINKAGE PROBLEMS 1	Genetic mapping
16.	GENETICSLINKAGE PROBLEMS 2	Genetic mapping
17.	bacterial genetics part 1 basics	Genetic mapping
18.	bacterial genetics part 2 transformation and transduction	Genetic mapping
19.	bacterial genetics part 3 conjugation mapping	Genetic mapping
20.	bacterial genetics part 4 complementation	Genetic mapping
21.	bacterial genetics part 5 complementation numericals	Genetic mapping
22.	DELETION AND RESTRICTION MAPPING THEORY	Genetic mapping
23.	Transposons 1	Genetic mapping
24.	Transposons 2	Genetic mapping

## LIST OF videos for CSIR NET Life Science on iGuruji

# LIST OF videos for CSIR NET Life Science on iGuruji

## Molecular Bio & RDT

Conformation of nucleic acids (helix (A, B, Z), t-RNA, micro-RNA).

**DNA replication, repair and recombination** (Unit of replication, enzymes involved, replication origin and replication fork, fidelity of replication, extrachromosomal replicons, DNA damage and repair mechanisms, homologous and site-specific recombination).

**RNA synthesis and processing** (transcription factors and machinery, formation of initiation complex, transcription activator and repressor, RNA polymerases, capping elongation, and termination, RNA processing, RNA editing, splicing, and polyadenylation, structure and function of different types of RNA, RNA transport).

Protein synthesis and processing (Ribosome, formation of initiation complex, initiation factors and their regulation, elongation and elongation factors, termination, genetic code, aminoacylation of tRNA, tRNA-identity, aminoacyl tRNA synthetase, and translational proof-reading, translational inhibitors, Post- translational modification of proteins).

Control of gene expression at transcription and translation level (regulating the expression of phages, viruses, prokaryotic and eukaryotic genes, role of chromatin in gene expression and gene silencing)

1.	DNA BASICS part 1	Fundamental Processes
2.	DNA BASICS PART 2	Fundamental Processes
3.	DNA BASICS PART 3	Fundamental Processes
4.	DNA Basics part 4 secondary structure	Fundamental Processes
5.	DNA Basics part 5 TOPOLOGY	Fundamental Processes
6.	DNA Basics part 6 RENATURATION KINETICS	Fundamental Processes
7.	MOL bio key words	Fundamental Processes
8.	DNA replication part 1	Fundamental Processes
9.	DNA replication part 2	Fundamental Processes
10.	DNA Repair part 1	Fundamental Processes
11.	DNA repair part 2	Fundamental Processes
12.	DNA recombination part 1	Fundamental Processes

# LIST OF videos for CSIR NET Life Science on iGuruji

## LIST OF videos for CSIR NET Life Science on iGuruji

13.	DNA recombination part 2	Fundamental Processes
14.	DNA recombination part 3	Fundamental Processes
15.	PROKARYOTIC TRANSCRIPTION part 1	Fundamental Processes
16.	PROKARYOTIC TRANSCRIPTION part 2 lac operon	Fundamental Processes
17.	PROKARYOTIC TRANSCRIPTION part 3 Trp ARA	Fundamental Processes
18.	eukaryotic transcription part 1	Fundamental Processes
19.	Eukaryotic transcription part 2	Fundamental Processes
20.	Eukaryotic transcription Part 3 RNA modifications	Fundamental Processes
21.	Chromatin remodelling part1	Fundamental Processes
22.	Chromatin remodelling part 2	Fundamental Processes
23.	Chromatin remodelling part 3	Fundamental Processes
24.	Chromatin remodelling part 4	Fundamental Processes
25.	PHAGE STRATEGIES part 1	Fundamental Processes
26.	PHAGE STRATEGIES part 2	Fundamental Processes
27.	PHAGE STRATEGIES part 3	Fundamental Processes
28.	Translation part 1	Fundamental Processes
29.	Translation part 2	Fundamental Processes

## LIST OF videos for CSIR NET Life Science on iGuruji

## LIST OF videos for CSIR NET Life Science on iGuruji

Molecular cloning of DNA or RNA fragments in bacterial and eukaryotic systems.  
 Expression of recombinant proteins using bacterial, animal and plant vectors.  
 Isolation of specific nucleic acid sequences  
 Generation of genomic and cDNA libraries in plasmid, phage, cosmid, BAC and YAC vectors.  
 In vitro mutagenesis and deletion techniques, gene knock out in bacterial and eukaryotic organisms. DNA sequencing methods, strategies for genome sequencing.  
 Methods for analysis of gene expression at RNA and protein level, large scale expression, such as micro array based techniques  
 RFLP, RAPD and AFLP techniques

1.	MOL BIO KEY WORDS PART 3 RDT	Recombinant DNA Technology
2.	RDT enzymes	Recombinant DNA Technology
3.	RDT plasmids	Recombinant DNA Technology
4.	RDT plasmids partition and replication copy number	Recombinant DNA Technology
5.	RDT plasmids isolation transformation	Recombinant DNA Technology
6.	RDT VECTORS part 1	Recombinant DNA Technology
7.	RDT vectors part 2	Recombinant DNA Technology
8.	RDT Molecular Techniques southern	Recombinant DNA Technology
9.	RDT 4 sequencing	Recombinant DNA Technology
10.	PCR in detail for NET GATE	Recombinant DNA Technology
11.	RNA INTERFERENCE PART 1	Recombinant DNA Technology
12.	RNA INTERFERENCE PART 2	Recombinant DNA Technology
13.	RDT FISH	Recombinant DNA Technology
14.	RDT Northern Western	Recombinant DNA Technology
15.	RDT Run off Run on	Recombinant DNA Technology
16.	RDT Chipassay yeast two hybrid	Recombinant DNA Technology

## LIST OF videos for CSIR NET Life Science on iGuruji

## LIST OF videos for CSIR NET Life Science on iGuruji

Tissue and cell culture methods for plants and animals.		
17.	plant tissue culture 1	Plant Biotechnology
18.	plant tissue culture 2	Plant Biotechnology
19.	plant tissue culture 3 media	Plant Biotechnology
20.	plant biotech part 1 vectors	Plant Biotechnology
21.	plant biotech part 2 transgenics	Plant Biotechnology
22.	ATC part 1	Animal Biotechnology
23.	ATC part 2	Animal Biotechnology
24.	ATC part 3	Animal Biotechnology

### Animal physiology

Blood and circulation - Blood corpuscles, haemopoiesis and formed elements, plasma function, blood volume, blood volume regulation, blood groups, haemoglobin, immunity, haemostasis.

B. Cardiovascular System: Comparative anatomy of heart structure, myogenic heart, specialized tissue, ECG – its principle and significance, cardiac cycle, heart as a pump, blood pressure, neural and chemical regulation of all above.

C. Respiratory system - Comparison of respiration in different species, anatomical considerations, transport of gases, exchange of gases, waste elimination, neural and chemical regulation of respiration.

D. Nervous system - Neurons, action potential, gross neuroanatomy of the brain and spinal cord, central and peripheral nervous system, neural control of muscle tone and posture.

E. Sense organs - Vision, hearing and tactile response.

F. Excretory system - Comparative physiology of excretion, kidney, urine formation, urine concentration, waste elimination, micturition, regulation of water balance, blood volume, blood pressure, electrolyte balance, acid-base balance.

I. Digestive system - Digestion, absorption, energy balance, BMR

1.	NERVE PHYSIOLOGY part 1	ANIMAL PHYSIOLOGY
2.	NERVE PHYSIOLOGY part 2	ANIMAL PHYSIOLOGY
3.	NERVE PHYSIOLOGY part 3	ANIMAL PHYSIOLOGY
4.	nervous system part 1	ANIMAL PHYSIOLOGY

## LIST OF videos for CSIR NET Life Science on iGuruji

## LIST OF videos for CSIR NET Life Science on iGuruji

5.	nervous system part 2	ANIMAL PHYSIOLOGY
6.	MUSCLE PHYSIOLOGY	ANIMAL PHYSIOLOGY
7.	circulatory system part 1 Blood	ANIMAL PHYSIOLOGY
8.	circulatory system part 2 Heart	ANIMAL PHYSIOLOGY
9.	circulatory system part 3 heart physiology	ANIMAL PHYSIOLOGY
10.	circulatory system part 4 ECG	ANIMAL PHYSIOLOGY
11.	circulatory system part 5 heart volumes	ANIMAL PHYSIOLOGY
12.	EXCRETION AND OSMOREGULATION part1	ANIMAL PHYSIOLOGY
13.	EXCRETION AND OSMOREGULATION part 3	ANIMAL PHYSIOLOGY
14.	EXCRETION AND OSMOREGULATION part 2	ANIMAL PHYSIOLOGY
15.	EXCRETION AND OSMOREGULATION part 4	ANIMAL PHYSIOLOGY
16.	RESPIRATION PART 1	ANIMAL PHYSIOLOGY
17.	RESPIRATION PART 2	ANIMAL PHYSIOLOGY
18.	RESPIRATION PART 3	ANIMAL PHYSIOLOGY
19.	RESPIRATION PART 4	ANIMAL PHYSIOLOGY
20.	RESPIRATION PART 5	ANIMAL PHYSIOLOGY
21.	RESPIRATION PART 6	ANIMAL PHYSIOLOGY
22.	GI TRACT and Digestion part 1	ANIMAL PHYSIOLOGY
23.	GI TRACT and Digestion part 2	ANIMAL PHYSIOLOGY
24.	GI TRACT and Digestion part 3	ANIMAL PHYSIOLOGY

## LIST OF videos for CSIR NET Life Science on iGuruji

## LIST OF videos for CSIR NET Life Science on iGuruji

Single neuron recording, patch-clamp recording, ECG, Brain activity recording, lesion and stimulation of brain, pharmacological testing, PET, MRI, fMRI, CAT .		
25.	medical imaging techniques 1	ANIMAL PHYSIOLOGY
26.	medical imaging techniques 2	ANIMAL PHYSIOLOGY
<b>Endocrinology and reproduction</b> - Endocrine glands, basic mechanism of hormone action, hormones and diseases; reproductive processes, gametogenesis, ovulation, neuroendocrine regulation		
27.	Endocrinology1	Endocrinology and Reproductive
28.	Endocrinology2	Endocrinology and Reproductive
29.	Endocrinology3	Endocrinology and Reproductive
30.	Endocrinology4	Endocrinology and Reproductive
31.	Endocrinology5	Endocrinology and Reproductive
32.	Endocrinology6	Endocrinology and Reproductive
33.	Endocrinology7	Endocrinology and Reproductive
34.	Endocrinology8	Endocrinology and Reproductive
35.	Endocrinology9	Endocrinology and Reproductive
36.	Endocrinology10	Endocrinology and Reproductive
37.	Endocrinology11	Endocrinology and Reproductive
38.	Endocrinology12	Endocrinology and Reproductive

## LIST OF videos for CSIR NET Life Science on iGuruji



# LIST OF videos for CSIR NET Life Science on iGuruji

## **PLANT PHYSIOLOGY**

Photosynthesis - Light harvesting complexes; mechanisms of electron transport; photoprotective mechanisms; CO<sub>2</sub> fixation-C<sub>3</sub>, C<sub>4</sub> and CAM pathways.

Respiration and photorespiration – Citric acid cycle; plant mitochondrial electron transport and ATP synthesis; alternate oxidase; photorespiratory pathway.

Nitrogen metabolism - Nitrate and ammonium assimilation; amino acid biosynthesis.

Plant hormones – Biosynthesis, storage, breakdown and transport; physiological effects and mechanisms of action.

Sensory photobiology - Structure, function and mechanisms of action of phytochromes, cryptochromes and phototropins; stomatal movement; photoperiodism and biological clocks

Solute transport and photoassimilate translocation – uptake, transport and translocation of water, ions, solutes and macromolecules from soil, through cells, across membranes, through xylem and phloem; transpiration; mechanisms of loading and unloading of photoassimilates.

Secondary metabolites - Biosynthesis of terpenes, phenols and nitrogenous compounds and their roles.

1.	plant water relation part 1	PLANT PHYSIOLOGY
2.	plant water relation part 2	PLANT PHYSIOLOGY
3.	plantwater relation part 3	PLANT PHYSIOLOGY
4.	plantwater relation part 4	PLANT PHYSIOLOGY
5.	PHOTOSYNTHESIS PART 1 BASICS	PLANT PHYSIOLOGY
6.	PHOTOSYNTHESIS PART 2 LIGHT REACTION 1	PLANT PHYSIOLOGY
7.	PHOTOSYNTHESIS PART 3 light reaction 2	PLANT PHYSIOLOGY
8.	PHOTOSYNTHESIS PART 4 calvin cycle	PLANT PHYSIOLOGY
9.	PHOTOSYNTHESIS PART 5 C <sub>4</sub> CAM and ecological adaptations	PLANT PHYSIOLOGY
10.	TRICK VIDEO plant hormones	PLANT PHYSIOLOGY
11.	PLANT HORMONES 1 auxin part 1	PLANT PHYSIOLOGY
12.	PLANT HORMONE 2 AUXIN PART 2	PLANT PHYSIOLOGY
13.	PLANT HORMONES 3 AUXIN PART 3	PLANT PHYSIOLOGY

# LIST OF videos for CSIR NET Life Science on iGuruji

## LIST OF videos for CSIR NET Life Science on iGuruji

14.	PLANT HORMONE 4 gibbrelin	PLANT PHYSIOLOGY
15.	PLANT HORMONE 5 CK	PLANT PHYSIOLOGY
16.	plant hormone 6 ethylene and brassinosteroid	PLANT PHYSIOLOGY
17.	Trick nitrogen fixation	PLANT PHYSIOLOGY
18.	Nitrogen fixation part 1	PLANT PHYSIOLOGY
19.	nitrogen fixation part 2	PLANT PHYSIOLOGY
20.	TRICK phytochrome and cryptochrome	PLANT PHYSIOLOGY
21.	PHYTOCHROME PART 1	PLANT PHYSIOLOGY
22.	PHYTOCHROME PART 2	PLANT PHYSIOLOGY
23.	Blue light response	PLANT PHYSIOLOGY
24.	plant secondary metabolites	PLANT PHYSIOLOGY

## LIST OF videos for CSIR NET Life Science on iGuruji

## LIST OF videos for CSIR NET Life Science on iGuruji

### Developmental Biology

Production of gametes, cell surface molecules in sperm-egg recognition in animals; embryo sac development and double fertilization in plants; zygote formation, cleavage, blastula formation, embryonic fields, gastrulation and formation of germ layers in animals; embryogenesis, establishment of symmetry in plants; seed formation and

1.	Dev Bio Basics & Key Words	Basics of Animal Development
2.	Spermatogenesis1	Basics of Animal Development
3.	Gametogenesis Part 2 Ovary And Menstrual Cycle	Basics of Animal Development
4.	Gametogenesis Part 3 Oogenesis And Egg Types	Basics of Animal Development
5.	Molecular Sex Determination	Basics of Animal Development
6.	Fertilization In Animals	Basics of Animal Development
7.	Cleavage Patterns	Basics of Animal Development
8.	Gastrulation Part 1	Basics of Animal Development
9.	key words developmental biology	Basics of Plant Development
10.	BASIC PLANT embryology part 1	Basics of Plant Development
11.	BASIC PLANT embryology part 2	Basics of Plant Development
12.	basic embryology part 4 embryogeny	Basics of Plant Development
13.	basic embryology part 5 seed structure	Basics of Plant Development
14.	basic embryology part 6 seed germination and dormancy	Basics of Plant Development
15.	basic embryology part 7 reproduction ovules types	Basics of Plant Development
16.	basic embryology part 8 plant Breeding	Basics of Plant Development
17.	basic embryology part 3 Endosperm	Basics of Plant Development

## LIST OF videos for CSIR NET Life Science on iGuruji

## LIST OF videos for CSIR NET Life Science on iGuruji

Cell aggregation and differentiation in <i>Dictyostelium</i> ; axes and pattern formation in <i>Drosophila</i> , amphibia and chick; organogenesis – vulva formation in <i>Caenorhabditis elegans</i> , eye lens induction, limb development and regeneration in vertebrates; , post embryonic development- larval formation, metamorphosis; environmental regulation of normal development; sex determination.		
18.	Bacillus Subtilis Sporulation	Advances in In-Vertebrate
19.	C Elegans Developmental Biology	Advances in In-Vertebrate
20.	Dictyostelium Life Cycle	Advances in In-Vertebrate
21.	Drosophila Part 1 Fertilization And Gastrulation	Advances in In-Vertebrate
22.	Drosophila Part 2	Advances in In-Vertebrate
23.	Drosophila Part 3	Advances in In-Vertebrate
24.	Drosophila Part 4 Homeotic Gene	Advances in In-Vertebrate
25.	Early Patterning And Symmetry Breaking	Advances in Vertebrate
26.	Stem Cell Differentiation	Advances in Vertebrate
27.	Limb Development Part1	Advances in Vertebrate
28.	Limb Development Part 2	Advances in Vertebrate
29.	amphibian development part 1	Advances in Vertebrate
30.	amphibian development part 2	Advances in Vertebrate
31.	amphibian development part 3	Advances in Vertebrate
Organization of shoot and root apical meristem; shoot and root development; leaf development and phyllotaxy; transition to flowering, floral meristems and floral development in <i>Arabidopsis</i> and <i>Antirrhinum</i>		
32.	ARABIDOPSIS DEVELOPMENT PART 1 early embryogenesis	Arabidopsis Developmental
33.	ARABIDOPSIS DEVELOPMENT PART 2 early patterning	Arabidopsis Developmental
34.	ARABIDOPSIS DEVELOPMENT part 3 SAM	Arabidopsis Developmental
35.	ARABIDOPSIS DEVELOPMENT part 4 RAM and LEAF	Arabidopsis Developmental

## LIST OF videos for CSIR NET Life Science on iGuruji

## LIST OF videos for CSIR NET Life Science on iGuruji

36.	flower development part 1	Arabidopsis Developmental
37.	flower development part 2	Arabidopsis Developmental

# LIST OF videos for CSIR NET Life Science on iGuruji

## Ecology and Biodiversity

Physical environment; biotic environment; biotic and abiotic interactions.		
1.	Ecology Part 1 Abiotic Factors Temp	Ecological factors
2.	Ecology Part 2 Abiotic Factors Light Atmosphere	Ecological factors
3.	Ecology Part 3 Biotic Factors	Ecological factors
<p>Population Ecology: Characteristics of a population; population growth curves; population regulation; life history strategies (r and K selection); concept of metapopulation – demes and dispersal, interdemec extinctions, age structured populations.</p> <p>Species Interactions: Types of interactions, interspecific competition, herbivory, carnivory, pollination, symbiosis.</p> <p>Community Ecology: Nature of communities; community structure and attributes; levels of species diversity and its measurement; edges and ecotones.</p> <p>Ecological Succession: Types; mechanisms; changes involved in succession; concept of climax.</p> <p>Ecosystem Ecology: Ecosystem structure; ecosystem function; energy flow and mineral cycling (C,N,P); primary production and decomposition; structure and function of some Indian ecosystems: terrestrial (forest, grassland) and aquatic (fresh water, marine, eustarine).</p> <p>Biogeography: Major terrestrial biomes; theory of island biogeography; biogeographical zones of India.</p>		
4.	Ecology Part 4 Population Ecology 1	Population community and ecosystem
5.	Ecology Part 5 Population Ecology 2	Population community and ecosystem
6.	Ecology Part 6 Population Ecology 3	Population community and ecosystem
7.	Ecology Part 7 Population Ecology 4 Lotka Voltera	Population community and ecosystem
8.	Island Biogeography	Population community and ecosystem
9.	Ecology Part 8 Community Ecology 1	Population community and ecosystem
10.	Ecology Part 9 Community Ecology 2 Control Mechanism	Population community and ecosystem
11.	Ecology Part 10 Community Ecology 3 Succession And Indicators	Population community and ecosystem
12.	Life Table	Population community and ecosystem

# LIST OF videos for CSIR NET Life Science on iGuruji

## LIST OF videos for CSIR NET Life Science on iGuruji

13.	Ecosystem Part 1 Introduction Pyramids	Population community and ecosystem
14.	Ecosystem Part 2 Energy Efficiencies	Population community and ecosystem
15.	Ecosystem Part 3 Biogeochemical Cycles	Population community and ecosystem
16.	Ecosystem Part 4 Wetlands	Population community and ecosystem
17.	Ecosystem Part 5 Ecosystem Types	Population community and ecosystem
18.	Ecosystem Part 6 Aquatic Ecosystem Types	Population community and ecosystem
19.	Pollution Part 1	Population community and ecosystem
20.	Pollution Part 2	Population community and ecosystem

Conservation Biology: Principles of conservation, major approaches to management, Indian case studies on conservation/management strategy (Project Tiger, Biosphere reserves).

21.	biodiversity part 1	Biodiversity & Conservation
22.	biodiversity part 2	Biodiversity & Conservation
23.	biodiversity part 3	Biodiversity & Conservation
24.	biodiversity part 4	Biodiversity & Conservation

## LIST OF videos for CSIR NET Life Science on iGuruji

# LIST OF videos for CSIR NET Life Science on iGuruji

## EVOLUTION Phylogeny And animal behaviour

Lamarck; Darwin–concepts of variation, adaptation, struggle, fitness and natural selection; Mendelism; Spontaneity of mutations; The evolutionary synthesis.

Origin of basic biological molecules; Abiotic synthesis of organic monomers and polymers; Concept of Oparin and Haldane; Experiment of Miller (1953); The first cell; Evolution of prokaryotes; Origin of eukaryotic cells; Evolution of unicellular eukaryotes;

1.	evolutionary theories 1	Evolutionary theories
2.	evolutionary theories 2	Evolutionary theories
3.	evolutionary theories 3 pattern of evolution	Evolutionary theories
4.	evolutionary theories 4 geological time scale	Evolutionary theories
5.	evolutionary theories speciation 1	Evolutionary theories
6.	evolutionary theories speciation isolation and mimicry	Evolutionary theories
7.	selection	Evolutionary theories
8.	human evolution part 1	Evolutionary theories
9.	human evolution part 2	Evolutionary theories
<p>Population genetics – Populations, Gene pool, Gene frequency; Hardy-Weinberg Law; concepts and rate of change in gene frequency through natural selection, migration and random genetic drift; Adaptive radiation; Isolating mechanisms; Speciation; Allopatricity and Sympatricity; Convergent evolution; Sexual selection; Co-evolution.</p> <p>Concepts of neutral evolution, molecular divergence and molecular clocks; Molecular tools in phylogeny, classification and identification; Protein and nucleotide sequence analysis; origin of new genes and proteins; Gene duplication and divergence.</p>		
10.	Population Genetics Part 1 Hardy Weinberg Principle	Population Genetics & Molecular Evolution
11.	Population Genetics Part 2 problems	Population Genetics & Molecular Evolution
12.	Population Genetics Part 3 problems	Population Genetics & Molecular Evolution
13.	Population Genetics Part 4 inbreeding coefficient problems	Population Genetics & Molecular Evolution

# LIST OF videos for CSIR NET Life Science on iGuruji



## LIST OF videos for CSIR NET Life Science on iGuruji

14.	Population Genetics Part 5 mutation selection	Population Genetics & Molecular Evolution
15.	population genetics part 6 problems advanced 1	Population Genetics & Molecular Evolution
16.	Population Genetics Part 7 genetic drift	Population Genetics & Molecular Evolution
17.	population genetics part 8 advanced problems	Population Genetics & Molecular Evolution
18.	advanced population genetics and molecular evolution part 1	Population Genetics & Molecular Evolution
19.	advanced population genetics and molecular evolution part 2	Population Genetics & Molecular Evolution
20.	Phylogenetic Tree Part 1	Population Genetics & Molecular Evolution
21.	Phylogenetic Tree Part 2	Population Genetics & Molecular Evolution
22.	Phylogenetic Tree Part 3	Population Genetics & Molecular Evolution

### Brain, Behavior and Evolution:

Approaches and methods in study of behavior; Proximate and ultimate causation; Altruism and evolution-Group selection, Kin selection, Reciprocal altruism; Neural basis of learning, memory, cognition, sleep and arousal; Biological clocks; Development of behavior; Social communication; Social dominance; Use of space and territoriality; Mating systems, Parental investment and Reproductive success; Parental care; Aggressive behavior; Habitat selection and optimality in foraging; Migration, orientation and navigation; Domestication and behavioral changes.

1.	Animal behavior part 1	Animal Behaviour
2.	Animal behavior part 2	Animal Behaviour
3.	Animal behavior part 3	Animal Behaviour
4.	Animal behavior part 4	Animal Behaviour
5.	Animal Behavior Part 5 Hamiltonian Rule	Animal Behaviour
6.	Animal Behavior Part 6 Altruism	Animal Behaviour
7.	animal behavior methods 1	Animal Behaviour
8.	animal behavior methods 2	Animal Behaviour

## LIST OF videos for CSIR NET Life Science on iGuruji

## LIST OF videos for CSIR NET Life Science on iGuruji

9.	neural basis of learning memory	Animal Behaviour
10.	neural basis of sleep and arousal	Animal Behaviour
11.	neural basis of cognition in human 3	Animal Behaviour
12.	neural basis of learning cognition 2	Animal Behaviour

LIST OF videos for CSIR NET Life Science on iGuruji