Discipline: Semester:3rd Biotechnology		Name of the Teaching Faculty: Dr. Sasmita Panigrahi		
ubject:(TH-5) nvironmental tudies	No. of Days/per week class allotted: 4	From Date: 01-07-2024 To Date:08-11-2024 No.of Weeks:15		
/eek	Class Day	Theory Topics		
		UNIT 1:The Multidisciplinary nature of environmental studies		
	1st	Definition & introduction of environment		
1 - 1	2nd	scope of environment		
1st	3rd	importance of environment		
	4th	Need for public awareness		
		UNIT 2:Natural Resources		
	1st	Forest resources		
2nd	2nd	water resources		
	3rd	Mineral & food Resources		
	4th	Energy & land Resources		
	1st	Land Resources: Land resource		
Qued	2nd	land degradation,man induces land slides		
3rd	3rd	Soil erosion		
	4th	desertification		
	1st	Role of individual in conservation of natural resources.		
	2nd	Equitable use of resources for sustainable life styles		
4th		UNIT 3:SYSTEM		
	3rd	Concept of an eco system.		
	4th	Structure and function of an eco system.		
	1st	Producers, consumers,		
5th	2nd	decomposers & food chain		
Jui	3rd	Energy flow in the eco systems		
	4th	Ecological succession.		
	1st	Introduction, types, characteristic features, structure and function of the eco system		
	2nd	Forest ecosystem,Aquatic eco systems		
6th		UNIT 4:Biodiversity and it's Conservation		
	3rd	Introduction-Definition: genetics, species		
	4th	ecosystem diversity		
	1st	Biogeographically classification of India.		

7th	2nd	Value of biodiversity: consumptive use,
701	3rd	productive use, social ethical
	4th	Biodiversity at global, national and local level.
	1st	Threats to biodiversity: Habitats loss,
	2nd	poaching of wild life, man wildlife conflicts.
8th		UNIT 5:Environmental Pollution:
	3rd	Air pollution.
	4th	water pollution.
	1st	soil pollution.
9th	2nd	marine pollution.
901	3rd	noise pollution.
	4th	thermal pollution.
	1st	nuclear hazards
10th	2nd	Solid waste Management:Causes, effects
1001	3rd	control measures of urban and industrial wastes.
	4th	Role of an individual in prevention of pollution
	1st	Disaster management:flood,drought
	2nd	land slide,earth quake
11th		UNIT 6:Social issues and the Environment:
	3rd	Form unsustainable to sustainable development
	4th	Urban problems related to energy.
	1st	water shed management
12th	2nd	water conservation
1201	3rd	rain water haevesting
	4th	Resettlement and rehabilitation of people; its problems and concern.
	1st	Environmental ethics: issue and possible solutions
	2nd	Climate change, global warming, acid rain,
13th	3rd	ozone layer depletion, nuclear accidents and holocaust, case studies
		unit 7:Human population and the environment
	4th	water act,air act
	1st	public awareness
14th	2nd	Population growth and variation among nations.
14(1)	3rd	Population explosion- family welfare program
	4th	Environment and humanhealth.
	1st	Human rights
15+b	2nd	value education
15th	3rd	Role of information technology in environment .
	4th	Role of information technology in human health.

DISCIPLINE: BIOTECHNOLOGY	SEMESTER:3 RD	NAMEOF THE TEACHING FACULTY: SWETANGINI NAIK
SUBJECT: (Pr-2) INTRODUCTION TO BIOTECHNOLOGY	NO.OFDAYS/PER WEEK CLASSALLOTED:4	FROM DATE:01/07/2024 TO DATE: 08/11/2024 NO OF WEEK: 15
WEEK:	CLASS DAY:	THEORY/PRACTICAL TOPICS:
1 st	1 st	EXP.1 Observe Basic instrumentation in biotechnology
	2 nd	Theory and principle
	3 rd	Demonstration of basic instruments
	4 th	Observation writing
2 nd	1 st	Discussion
	2 nd	Record submission
_	3 rd	Exp.2 To Conduct Protoplast isolation and fusion
	4 th	Theory and principle
3 rd	1 st	What is protoplast?
	2 nd	Protoplast isolation and fusion
	3 rd	Experimental work
	4 th	Observation and record submission
4 th	1 st	Exp.3 To Demonstrate Structure of DNA
	2 nd	Theory and principle
	3 rd	Brief explaination about DNA
	4 th	Demonstration
5 th	1 st	Observation and discussion
	2 nd	Record submission
	3 rd	Exp.4 To Isolate DNA from Plant cell
	4 th	Theory and principle
6 th	1 st	DNA of plant cell
	2 nd	Demonstration
	3 rd	Observation and result
	4 th	Record submission
7 th	1 st	Exp.5 To Quantify DNA by using spectrophotometer
	2 nd	Theory and principle
	3 rd	Spectrophotometer
	4 th	Calibration
8 th	1 st	Demonstration

	2 nd	Observation and record submission	
	3 rd	Exp.6 Demonstrate PCR (Polymerase chain reaction)	
	4 th	Theory and principle	
9 th	1 st	Demonstration	
	2 nd	Experimental work	
	3 rd	Result and discussion	
	4 th	Record submission	
10 th	1 st	Exp.7 Demonstrate Different types of Centrifugation	
	2 nd	Theory and principle	
	3 rd	Centrifugation	
	4 th	Demonstration	
	1 st	Result and discussion	
11 th	1 st	Record submission	
	2 nd	Exp.8 To perform Cell immobilization by using sodium alginate and	
		calcium	
		chloride	
	3 rd	Theory and principle	
	4 th	What is cell immobilization?	
12 th	1 st	Alginate and calcium	
	2 nd	Demonstration	
	3 rd	Result and discussion	
	4 th	Exp.9 To Extract enzymes from milk	
13 th	1 st	Theory and principle	
	2 nd	What is enzyme?	
	3 rd	Demonstration	
	4 th	Result and observation	
14 th	1 st	Record submission	
	2 nd	Exp. 10 To analyze Enzyme kinetic of the given enzyme	
	3 rd	Theory and principle	
	4 th	Enzyme kinetic	
15 th	1 st	Demonstration	
	2 nd	Result and Discussion	
	3 rd	Observation writing	
	4 th	Record submission	

DISCIPLINE: BIOTECHNOLOGY	SEMESTER: 3 RD	NAMEOF THE TEACHING FACULTY: SIBASIS MAHAPATRA	
SUBJECT: (Th-1) PHYSICAL CHEMISTRY	NO.OFDAYS/PER WEEK CLASSALLOTED:4	FROM DATE: 01-07-2024 TO DATE: 08-11-2024 NO OF WEEK: 15	
WEEK:	CLASS DAY:	THEORY/PRACTICAL TOPICS:	
1 st	1 st	1.1Intermolecular forces in liquid.	
	2 nd	Vapour pressure and its effect on temperature and boiling point.	
	3 rd	Surface tension.	
	4 th	Viscosity and measurement of viscosity by Ostwald method.	
2 nd	1 st	Refractive index, specific refraction, determination of refractive index	
	2 nd	Optical activity and measurement of optical activity.	
	3 rd	Solve simple problems based on physical properties of liquid.	
	4 th	2.1Solution and Types of solutions	
3 rd	1 st	Ways of expressing concentration.	
	2 nd	Sol Solution and Types of solutions ve numerical related to concentration.	
	3 rd	The solution of gases in gases.	
	4 th	Henry's law and solve numerical related to it.	
4 th	1 st	Solutions of liquid in liquids.	
	2 nd	Solubility of partially miscible liquids	
	3 rd	Solubility of solid in liquid and equilibrium concept, solubility curve.	
	4 th	Raoult's Law, ideal solution and explain the lowering of vapour pressure and its measurement.	
5 th	1 st	Concept of elevation of boiling point and depression of freezing point.	
	2 nd	3.1Osmosis and osmotic pressure with example.	
	3 rd	Function of semi permeable membrane.	
	4 th	Osmotic pressure and isotonic solutions.	
6 th	1 st	The theories of Osmosis.	
	2 nd	Reverse osmosis.	
	3 rd	The laws of osmotic pressure.	
	4 th	Solve the Simple Problems.	

7 th	1 st	Relation between Vapour Pressure & Osmotic Pressure.	
	2 nd	4.1Nernst's distribution law.	
	3 rd	Equilibrium constant from distribution coefficient.	
	4 th	Extraction with a solvent, multiple extraction.	
8 th	1 st	Concept of liquid-liquid chromatography.	
	2 nd	Applications of distribution law.	
	3 rd	Numerical based on distribution law.	
	4 th	5.1Colloids & types of colloidal systems.	
9 th	1 st	Characteristics of sols.	
	2 nd	The application of colloids.	
	3 rd	Methods of preparation of sols	
	4 th	purification of sols.	
10 th	1 st	The optical, kinetic properties of sols.	
	2 nd	electrical properties of sols.	
	3 rd	Emulsion and types of emulsion	
	4 th	The role of Emulsifier & their properties.	
	1 st	The preparation of Emulsions	
11 th	1 st	Gel, type of gel, properties and application	
	2 nd	6.1 Adsorption	
	3 rd	Compare absorption and adsorption	
	4 th	Compare absorption and adsorption	
12 th	1 st	Types of adsorption.	
	2 nd	Types of adsorption.	
	3 rd	Physical adsorption	
	4 th	Physical adsorption	
13 th	1 st	Chemisorption	
	2 nd	Chemisorption	
	3 rd	The application of adsorption	
	4 th	The application of adsorption	
14 th	1 st	The Ion- exchange adsorption	
	2 nd	The Ion- exchange adsorption	
	3 rd	Application of ion –exchange adsorption	
	4 th	Application of ion –exchange adsorption	
15 th	1 st	Doubt clearing session	
	2 nd	revision	
	3 rd	Class test	
	4 th	Class test	

DISCIPLINE: BIOTECHNOLOGY	SEMESTER:3 RD	NAMEOF THE TEACHING FACULTY: SIBASIS MAHAPATRA SUNIL BISWAJIT MAHARANA
SUBJECT: (Pr-1) PHYSICAL CHEMISTRY	NO.OF DAYS/PER WEEK CLASSALLOTED:4	FROM DATE:01/07/2024 TO DATE: 08/11/2024 NO OF WEEK: 15
WEEK:	CLASS DAY:	THEORY/PRACTICAL TOPICS:
1 st	1 st	Exp.1 Preparation of standard solution of an acid and alkali
	2 nd	Demonstration
	3 rd	Preparation of standard solution of an acid
	4 th	Observation and discussion
2 nd	1 st	Preparation of standard solution of an alkali
	2 nd	Submission of record and observation
	3 rd	Exp.2 Determine the viscosity of a liquid by Red wood viscometer at different temperatures and plotting graph between viscosity and temperature
	4 th	Theory- viscosity, red wood viscometer
3 rd	1 st	Demonstration
	2 nd	Experimental work-observation and result
	3 rd	Observation writing and discussion
	4 th	Submission of Record
4 th	1 st	Exp.3 To determine the partition coefficient of iodine between water and carbon tetrachloride.
	2 nd	Theory- partition coefficient, calculation
	3 rd	Demonstration
	4 th	Experimental work
5 th	1 st	Result and discussion
	2 nd	Observation and record submission
	3 rd	Exp.4 To determine the partition coefficient of benzoic acid between water and benzene at room temperature and molecular state of Benzoic acid in benzene as compared to its solution in water.
	4 th	Theory- What is benzene ,Benzoic acid, molecular state of Benzoic acid.
6 th	1 st	Demonstration
	2 nd	Experimantal work
	3 rd	Result and discussion
	4 th	observation and record submission

7 th	1 st	Exp.5 To prepare colloidal solution of starch.
	2 nd	What is colloidal solution?
	3 rd	What is starch?
	4 th	Demonstarion
8 th	1 st	Observation and record
	2 nd	Submission of record
	3 rd	Exp.6 To prepare colloidal solution of egg albumin.
	4 th	Theory and principle
9 th	1 st	Demonstration
5	2 nd	Experimental work
	3 rd	Repeat of practical work
	3	Record writing
10 th	1 st	Exp.7 Determine the solubility of a given salt at room
10		temperature and also draw its solubility curve.
	2 nd	Theory and principle
	3 rd	What is solubility?
	3	Demonstration
	1 st	Result and discussion
11 th	1 st	Record submission
11	2 nd	
	2	Exp.8 To determine the adsorption isotherm of acetic acid by activated charcoal.
	3 rd	
	5	Theory and principle
12 th	1 st	What is adsorption isotherm?
12	2 nd	Acetic acid and activated charcoal
	3 rd	Demonstration
	3.3	Result and discussion
	4	Exp.9 To investigate the adsorption of oxalic acid from
		aqueous solution of activated charcoal and examines the
13 th	1 st	validity of Freundlich and Langmuir's adsorption isotherm
13	2 nd	Theory and principle
	3 rd	Langmuir's adsorption isotherm
	3 ^{rs}	Demonstration
a ath		Result and observation
14 th	1 st 2 nd	Record submission
	214	Exp. 10 To determine the rate constant for hydrolysis of
	Ord	ethyl acetate catalysed by hydrochloric acid
	3 rd	Theory and principle
a —th	4 th	Rate constant for Hydrolysis
15 th	1 st	Demonstration
	2 nd	Result and Discussion
	3 rd	Observation writing
	4 th	Record submission

DISCIPLINE: BIOTECHNOLOGY	SEMESTER:3 RD	NAMEOF THE TEACHING FACULTY: SWETANGINI NAIK
SUBJECT: (Th-3) Introduction to	NO.OFDAYS/PER WEEK CLASSALLOTED:4	FROM DATE: 01-07-2024 TO DATE: 08-11-2024
Biotechnology		NO OF WEEK: 15
WEEK:	CLASS DAY:	THEORY/PRACTICAL TOPICS:
1 st	1 st	1.1 Introduction of Biotechnology
	2 nd	History
	3 rd	Traditional biotechnology
	4 th	Fermentation technology
2 nd	1 st	Fermentation technology
	2 nd	modern biotechnology
	3 rd	r DNA technology
	4 th	Genetic engineering
3 rd	1 st	Different disciplinary of Biotechnology
	2 nd	Different disciplinary of Biotechnology
	3 rd	Applications of biotechnology
	4 th	Global impact of Biotechnology.
4 th	1 st	Genes and genetics
	2 nd	Basic concept of DNA
	3 rd	Watson and crick model of DNA
	4 th	Chemical composition of DNA
5 th	1 st	Chemical composition of DNA
	2 nd	PCR technology
	3 rd	PCR technology
	4 th	Structure of RNA
6 th	1 st	Structure of RNA
	2 nd	Chemical composition
	3 rd	Chemical composition
	4 th	Genes
7 th	1 st	Genome.
	2 nd	Genome.
	3 rd	Environmental biotechnology
	4 th	Bioremediation
8 th	1 st	Xenobiotics
	2 nd	Xenobiotics
	3 rd	Bioagumentation
	4 th	Bioagumentation

9 th	1 st	Vermi -composting
	2 nd	Vermi composting
	3 rd	Microbial Leaching
	4 th	Microbial Leaching
10 th	1 st	Animal biotechnology
	2 nd	Main terminology in cell culture
	3 rd	Main terminology in cell culture
	4 th	Minimal requirements for animal cell culture
11 th	1 st	Minimal requirements for animal cell culture
	2 nd	Media composition of animal cell culture
	3 rd	Media composition of animal cell culture
	4 th	Some examples of transgenic animals (like Dolly)
12 th	1 st	Some examples of transgenic animals (like Dolly)
	2 nd	Some application of animal cell culture
	3 rd	Some application of animal cell culture
	4 th	discussion
13 th	1 st	Class test
	2 nd	Biotechnology & biosafety
	3 rd	Biosafety guideline and Regulations
	4 th	Biosafety guideline and Regulations
14 th	1 st	IPR and IPP
	2 nd	WIPO
	3 rd	WIPO
	4 th	Patenting of Biological materials
15 th	1 st	Patenting of Biological materials
	2 nd	Significance of patents in India
	3 rd	Significance of patents in India
	4 th	Revision and class test

DISCIPLINE: Biotechnology	SEMESTER:	NAME OF THE TEACHING FACULTY:
	3 rd Sem.	Dr. Sasmita Panigrahi
SUBJECT:	NO. OF DAYS/ PER	FROM DATE: 01-07-2024
Environmental Engg.	WEEK CLASS	TO DATE: 08-11-2024
Laboratory.	ALLOTTED:04	NO. OF WEEKS:15
WEEK	CLASS DAY	THEORY/ PRACTICAL TOPICS
1 st	1 st	Discussion about water, its constituents and its purity.
	2 nd	Collection of water of from different area.
	3 rd	Preparation of distil water.
	4 th	Discussion about water dissolved Chlorine and its procedure.
2 nd	1 st	Experiment.
	2 nd	Experiment.
	3 rd	Experiment.
	4 th	Experiment.
3 rd	1 st	Record writing and discussion.
	2 nd	Record checking.
	3 rd	Discussion about water dissolved oxygen and Winkler' method procedure.
	4 th	Preparation of Chemicals
4 th	1 st	Preparation of Chemicals
	2 nd	Experiment.
	3 rd	Experiment.
	4 th	Experiment.
5 th	1 st	Experiment.
	2 nd	Record writing and discussion.
	3 rd	Record checking.
	4 th	Discussion about BOD of water.
6 st	1 st	Preparation of Chemicals
	2 nd	Preparation of Chemicals
	3 rd	Experiment.
	4 th	Experiment.
7 th	1 st	Experiment.
	2 nd	Experiment.
	3 rd	Record writing and discussion.
	4 th	Record checking.
8 th	1 st	Discussion about COD of water.
	2 nd	Preparation of Chemicals
	3 rd	Preparation of Chemicals
	4 th	Experiment.
9 th	1 st	Experiment.
	2 nd	
	3 rd	Experiment.
	4 th	Record writing and discussion.
10 th	1 st	Record checking.
10	2 nd	Discussion about turbidity of water.
	2 rd	Preparation of Chemicals
	4 th	Preparation of Chemicals
11st	1 st	Experiment.
11 st		Experiment.
	2 nd 3 rd	Record writing and discussion.
		Record checking.
	4 th	Discussion about total dissolved solid of water and its procedure.

12 th	1 st	Preparation of Chemicals
	2 nd	Preparation of Chemicals
	3 rd	Experiment.
	4 th	Experiment.
13 th	1 st	Record writing and discussion.
	2 nd	Record checking.
	3 rd	Discussion about coagulant and its procedure.
	4 th	Preparation of Chemicals
14 th	1 st	Experiment.
	2 nd	Record writing and discussion.
	3 rd	Record checking.
	4 th	Discussion about Sulphate in water and its procedure.
15 th	1 st	Preparation of Chemicals
	2 nd	Experiment.
	3 rd	Record writing and discussion.
	4 th	Record checking.

DISCIPLINE:	SEMESTER:	NAME OF THE TEACHING FACULTY:
Biotechnology	3 rd Sem.	Sunil Biswajit Maharana
SUBJECT: (PR-3)	NO. OF DAYS/ PER	FROM DATE: 01-07-2024
Cell and Molecular	WEEK CLASS	TO DATE: 08-11-2024
Biology	ALLOTTED:05	NO. OF WEEKS:15
WEEK	CLASS DAY	THEORY/ PRACTICAL TOPICS
1 st		Discussion about microscope and its parts.
1	2 nd	Handling of Microscope
	3 rd	Preparation of slides
	4 th	Preparation of slides
	5 th	Preparation of slides
2 nd	1 st	Identification of slides
Z	2 nd	Identification of slides
	3 rd	Identification of slides
	3	Record writing and discussion.
	5 th	Record checking.
3 rd	1 st	Discussion about chromatography and instruments.
5	2 nd	Collection of distil water
	3 rd	Collection of distil water
	4 th	Preparation of chemicals.
	5 th	Preparation of chemicals.
4 th	1 st	Experiment on chromatography.
т 	2 nd	Experiment on chromatography
	3 rd	Experiment on chromatography Experiment on chromatography
	4 th	Record writing and discussion.
	5 th	Record checking.
5 th	1 st	Discussion about Mitosis and its process.
5	2 nd	Discussion about Mitosis and its process.
	3 rd	Discussion about Mitosis and its process.
	4 th	Culture of onion
	5 th	Culture of onion
6 st	1 st	Preparation of slides of onion root tip
.	2 nd	Preparation of slides of onion root tip
	3 rd	Preparation of slides of onion root tip
	4 th	Preparation of slides of onion root tip
	5 th	Identification of different stages.
7 th	1 st	Identification of different stages.
	2 nd	Identification of different stages.
	3 rd	Record writing and discussion.
	4 th	Record checking.
	5 th	Discussion about Meiosis and its process.
8 th	1 st	Discussion about Meiosis and its process.
	2 nd	Discussion about Meiosis and its process.
	3 rd	Culture of onion
	4 th	Culture of onion
	5 th	Preparation of slides of onion root tip
9 th	1 st	Preparation of slides of onion root tip
	2 nd	Identification of different stages.
	3 rd	Identification of different stages.
	4 th	Identification of different stages.
10 th	-	
10 th	5 th 1 st	Record writing and discussion. Record checking.

	2 nd	Discussion about blood smear and its process.
	3 rd	Discussion about blood smear and its process.
	4 th	Preparation of chemicals.
	5 th	Preparation of chemicals.
11 st	1 st	Isolation of blood
	2 nd	Preparation of blood smears.
	3 rd	Record writing and discussion.
	4 th	Record checking.
	5 th	Discussion about blood constituents its process.
12 th	1 st	Discussion about blood constituents its process.
	2 nd	Isolation of blood
	3 rd	Separation of constituents from blood.
	4 th	Identification of constituents from blood.
	5 th	Record writing and discussion.
13 th	1 st	Record checking.
	2 nd	Discussion about bacteria and its isolation its process.
	3 rd	Preparation chemicals.
	4 th	Culture of Bacteria.
	5 th	Isolation of Bacterial DNA
14 th	1 st	Purity checking of DNA.
	2 nd	Record writing and discussion.
	3 rd	Record checking.
	4 th	Discussion about Plasmid and its isolation its process.
	5 th	Preparation chemicals.
15 th	1 st	Isolation of Plasmid DNA
	2 nd	Isolation of Plasmid DNA
	3 rd	Purity checking of DNA.
	4 th	Record writing and discussion.
	5 th	Record checking.

Biotechnology3rd SemSunil Biswajit MaharanaSUBJECT: (Th-4)NO. OF DAYS/FROM DATE: 01-07-2024CELL AND MOLECULARPER WEEK CLASSTO DATE: 08-11-2024BIOLOGYALLOTTED:04NO. OF WEEKS:15WEEKCLASS DAYTHEORY/ PRACTICAL TOPICS1 ⁿ 1 ⁿ What is cell.2 nd What is Prokaryotic cells?3 rd What is Prokaryotic cells?1 ⁿ 1 ⁿ Ofference between Prokaryotic and Eukaryotic cells2 nd Cell structure .2 nd Cell functions.2 nd Cell functions.3 rd What is Nucleus?3 rd What is Call crycle?3 rd What is Clucosme?3 rd What is Clucosme?3 rd What is Clucosme?3 rd Processes of Cell cycle?4 th phases of cell cycle?4 th Processes of Meiosis.5 th 1stDifference between Mitosis and Meiosis.6 th 3 rd What is Actin ?1 th What is DNA Replication.5 th 1stWhat is DNA Replication.5 th 1stWhat is DNA Replication.5 th 1stProcess of DNA Replication.6 th 1stProcess of DNA Replication.6 th 1stWhat is DNA Recombination?7 th 1st<	DISCIPLINE:	SEMESTER:	NAME OF THE TEACHING FACULTY:
SUBJECT: (Th-4) NO. OF DAYS/ FROM DATE: 01-07-2024 CELL AND MOLECULAR PER WERC CLASS TO DATE: 08-11-2024 BIOLOGY ALLOTTED:04 NO. OF WERKS:15 1 ¹² 1 ¹² What is Cell. 1 ¹⁴ 1 ¹⁶ What is Prokaryotic cells? 1 ¹⁴ 1 ¹⁷ Cell structure . 2 ¹⁶ Ofference between Prokaryotic cells? 2 ¹⁶ Cell functions. 3 ¹⁷ What is Nucleus? 4 ¹⁸ . What is Nucleus? 4 ¹⁸ . What is Nucleus? 2 ¹⁶¹ Chromosome types? 3 ¹⁷⁶ Phases of Cell cycle? 4 ¹⁸ phases of Cell cycle? 4 ¹⁸ phases of Cell cycle? 4 ¹⁸ Phases of Mitosis. 4 ¹⁸ Phases of Mitosis. 4 ¹⁸ Phases of Mitosis and Meiosis. 5 ¹⁹ 1st Difference between Mitosis and Meiosis. 5 ¹⁹ 1st Difference between Mitosis and Meiosis. 5 ¹⁹ 1st Difference between Mitosis and Meiosis. 2 ¹⁰⁴ Yapes of DNA Replication. Yamont is DNA Process of DNA Replication.			
CELL AND MOLÉCULAR BIOLOGY PER WEEK CLASS ALLOTTED:04 TO DATE: 08-11-2024 NO. OF WEEKS:15 1 ⁴⁵ 1 ⁴⁵ What is cell. 1 ⁴⁶ 1 ⁴⁵ What is cell. 2 ⁴⁷ What is Prokaryotic cells? 3 ⁴⁷ What is Lowaryotic cells? 2 ⁴⁴ 2 ⁴⁷ 2 ⁴⁷ Cell structure . 2 ⁴⁷ Cell functions. 3 ⁴⁷ What is Nucleosome? 3 ⁴⁷ What is Chromosome? 2 ⁴⁷⁴ Chromosome? 3 ⁴⁷⁵ What is Chromosome? 3 ⁴⁷⁶ What is Coll cycle? 3 ⁴⁷⁶ Processes of Cell cycle? 4 ⁴⁷⁹ Processes of Cell cycle? 4 ⁴⁷⁹ Processes of Cell cycle? 3 ⁴⁷⁶ Phases of Mitosis. 5 ⁴⁷⁹ 1st Difference between Mitosis and Meiosis. 3 ⁴⁷⁶ What is Cytoskeleton? 3 ⁴⁷⁶ Processes of Cell cycle? 3 ⁴⁷⁶			
BIOLOGY ALLOTTED:04 NO. OF WEEKS:15 WEEK CLASS DAY THEORY/ PRACTICAL TOPICS 1 ⁴¹ 1 ⁴¹ What is cell. 2 ⁴⁴ What is rokaryotic cells? 3 ⁴⁷ What is Karyotic cells? 4 ⁴⁰ Difference between Prokaryotic and Eukaryotic cells 2 ⁴⁴¹ Cell structure. 2 ⁴⁴¹ Cell structure. 2 ⁴⁴¹ What is Nucleosome? 3 ⁴⁷¹ What is Chromosome? 2 ⁴⁴¹ Chromosome types? 3 ⁴⁷¹ What is Cell cycle? 4 ⁴⁴¹ Phases of Cell cycle? 4 ⁴⁴¹ Phases of Cell cycle? 4 ⁴⁴¹ Phases of Cell cycle? 3 ⁴⁷² Processes of Cell cycle? 3 ⁴⁷⁴ Phases of Mitosis . 4 ⁴⁴¹ Phases of Mitosis . 3 ⁴⁷⁴ Phases of Mitosis .	• •	-	
WEEKCLASS DAYTHEORY/ PRACTICAL TOPICS1 st 1 st What is cell.1 st 2 ^{sd} What is Prokaryotic cells?3 rd What is Eukaryotic cells?1 st Cell structure.2 ^{sd} 2 ^{sd} 3 rd What is Eukaryotic cells?3 rd What is Call structure.3 rd What is Nucleosome?3 rd What is Nucleosome?3 rd Uhat is Cell cycle?3 rd What is Cell cycle?3 rd Processes of Cell cycle?4 ^{rh} Phases of ell cycle?4 ^{rh} Phases of microsis.5 ^{rh} 1st2 rd What is Chromosome?3 rd Phases of Microsis.5 ^{rh} 1st5 ^{rh} 1st1 ^{rh} Processes of Cell cycle?3 rd What is Actin ?3 rd What is Mosin?6 ^{sd} 1 st 2 rd What is Mosin?6 ^{sd} 1 st 3 rd Process of DNA Replication.7 ^{rh} 1 st 7 ^{rh} 1 st 7 ^{rh} 1 st 7 rd Process of Recombination?7 rd 1 st 8 rd 1 st 8 rd 1 st 7 rd 1 st 7 ^{rh} 1 st 7 rd 1 st 7 rd 1 st 8 rd 8 rd 1 st 7 rd 1 st 7 rd 1 st 7 rd 7 rd 7 rd 7 rd 7 rd </th <th></th> <th></th> <th></th>			
1* What is cell. 2'd What is Prokaryotic cells? 3'd What is Eukaryotic cells? 4'h Difference between Prokaryotic and Eukaryotic cells 2'd Cell functions. 2'd Cell functions. 3'd What is Nucleus? 4'h .What is Nucleus? 4'h .What is Chromosome? 3'd What is Chromosome? 3'd What is Cleil cycle? 3'd What is Cell cycle? 4'h phases of cell cycle? 3'd Phases of Cell cycle? 3'd Phases of Mitosis . 4'h Phases of Mitosis . 4'h Phases of Mitosis . 5'h 1st 0'fference between Mitosis and Melosis. 2'd What is Cytoskeleton? 3'd Types of DNA Replication. 4'h Phases of DNA Replication. 4'h Process of Recombination? 4'h Process of Recombination. 2'd Types of DNA Replication. 3'd Enzymes of DNA Replication. 4'h Process of Recombination?			
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11 st	1 st	Pre transcriptional processing?
	2 nd	Post transcriptional processing?
	3 rd	Capping and poly (A) tailing
	4 th	m-RNA stability-RNA editing
12 th	1 st	Process of m-RNA stability-RNA editing
	2 nd	What is translation)
	3 rd	Genetic code & the principle of translation.
	4 th	Main Translation machinery (t-RNA, Aminoacyl synthetase,
		Ribosome),
13 th	1 st	Main Translation machinery (t-RNA, Aminoacyl synthetase,
		Ribosome),
	2 nd	Translation process (Initiation)Process
	3 rd	Translation process (Elongation) Process
	4 th	Translation process (Termination) Process
14 th	1 st	Post translational process.
	2 nd	Regulation of Gene Expression: Constitutive and Induced gene
		expression
	3 rd	Regulation of Gene Expression: Constitutive and Induced gene
		expression
	4 th	Regulation of Gene Expression: Constitutive and Induced gene
		expression
15 th	1 st	Regulation of gene expression in prokaryotes.
	2 nd	Regulation of gene expression in eukaryotes.
	3 rd	Operon model (Lac-operon)
	4 th	Operon model (Trp- operon)

DISCIPLINE:	SEMESTER: 3 rd	NAME OF THE TEACHING FACULTY:
Biotechnology	SLIVILSTER. S	Dr. Sasmita Panigrahi
SUBJECT: Th-2	NO. OF DAYS/	FROM DATE: 01-07-2024
Basic Life Science	PER WEEK CLASS	TO DATE: 08-11-2024
(Theory)	ALLOTTED: 04	NO. OF WEEKS: 15
WEEK	CLASS DAY	THEORY TOPICS
1 st	1 st	Introduction to Biology
1	2 nd	Concept of Botany
	3 rd	Discovery of Cell
	4 th	Terms used in plant life
2 nd	1 st	Discovery of plant cell and its organs
	2 nd	Concept of Zoology
	3 rd	Discovery of animal cell and its organs
	4 th	Cell Theory
3 rd	1 st	Two kingdom system
	2 nd	Five kingdom Classification
	3 rd	Morphology and Anatomy
	4 th	Tissues
4 th	1 st	About animal tissue
	2 nd	About plant tissue
	3 rd	Anatomy of Plant tissue
	4 th	Anatomy of Animal tissue
5 th	1 st	Bio-nomial nomenclature
	2 nd	Morphology of flowering plants
	3 rd	Mendelian principle
	4 th	Continuity of Life
6 th	1 st	Mendel's laws of inheritance.
	2 nd	Monohybrid cross
	3 rd	Dihybrid cross
	4 th	Sex linked inheritance.
7 th	1 st	Sex determination
	2 nd	Test-1
	3 rd	Chromosomal abbreviation
	4 th	Chromosomal disorder
8 th	1 st	Nutrition
	2 nd	Photosynthesis.
	3 rd	About Chlorophyll pigment
	4 th	Chloroplast structure
9 th	1 st	Chloroplast function
	2 nd	Digestive system
	3 rd	Digestive enzymes
	4 th	Digestive glands
10 th	1 st	Process of digestion in human beings
	2 nd	Respiration
	3 rd	Cellular respiration.
	4 th	Structure and function of ATP
11 th	1 st	Concept of fermentation
	2 nd	Test 2
	3 rd	Transport
	4 th	Plant water relationship

12 th	1 st	Transport of water	
	2 nd	Transport of minerals in plants	
	3 rd	Fundamentals of transpiration.	
	4 th	Circulation of blood in human body.	
13 th	1 st	Different kind of minerals	
	2 nd	Concept of fermentation	
	3 rd	Osmosis	
	4 th	ATP production	
14 th	1 st	Calvin cycle	
	2 nd	Kreb's cycle	
	3 rd	Structure of mitochondria	
	4 th	Blood grouping	
15 th	1 st	T/A apparatus	
	2 nd	Transpiration	
	3 rd	Circulation in Plants	
	4 th	Test 3	