Name of the teacher: Prof. Dr R.V Salunkhe **Year:** 2020-2021

Semester: I

Subject: Pest management **Paper:** I **Class:** T Y B Sc

Part I : Teaching Plan						Part II : Evaluation of Plan			
1	2	3	4	5	6	7	8	9	10
Sr. No.	Month	Week	No. of working days	No. of periods available	Topics to be taught	No. of periods engaged	Topics taught	Deviation in periods	Remarks
1	July 2021	2 & 4	11	8	1. Pest: Definition, Types of pests, Types of damages caused by the pest. 2. Pest management using Regulatory control: Quarantine, Eradication, Control districts, "Crop-free" periods.	8	1. Pest: Definition, Types of pests, Types of damages caused by the pest. 2. Pest management using Regulatory control: Quarantine, Eradication, Control districts, "Crop-free" periods.	Nil	--
2	August 2021	1 &2	11	8	3. Pest management using Cultural control:Sanitation,Tillage,Crop rotation. Cropping systems. 4. Pest management using Biological control: Ecological considerations, Biological control of insects, Biological control of plant disease, Biological control of weeds.	9	3. Pest management using Cultural control:Sanitation,Tillage,Crop rotation. Cropping systems. 4. Pest management using Biological control: Ecological considerations, Biological control of insects, Biological control of plant disease, Biological control of weeds.	1	Extra lecture was conducted
3	Sept 2021	1 & 2	12	8	5. Biotechnology approaches in pest management: Introduction. Recent advance in use of fungi and viruses. Methodology in Biotechnology, Somaclonal variability, Concept of Genetic engineering and Transgenic plants.	8	5. Biotechnology approaches in pest management: Introduction. Recent advance in use of fungi and viruses. Methodology in Biotechnology, Somaclonal variability, Concept of Genetic engineering and Transgenic plants.	Nil	--
4	Sept 2021	3 & 4	12	8	6. Integrated pest management (IPM): Principles and its components, Advantages and disadvantages, Biological control -	8	6. Integrated pest management (IPM): Principles and its components, Advantages and disadvantages, Biological control - Predators,		--

					Predators, Parasitoids, Entomopathogens, Weed killers and their mass production. 7. Insecticides: Classification of insecticides based on mode of entry, Action and chemical nature.		Parasitoids, Entomopathogens, Weed killers and their mass production. 7. Insecticides: Classification of insecticides based on mode of entry, Action and chemical nature.		
5	Oct 2021	1 & 2	12	8	Insecticides formulations and their uses. 8 Safe handling of insecticides, Insecticide residue: Methods of residue detection – Organochlorine, Organophosphates, Synthetic Pyrithroides, Systemic, Problems in fruits, vegetables, medicinal plants, Maximum permissible residue limits (MRLs).	9	Insecticides formulations and their uses. 8 Safe handling of insecticides, Insecticide residue: Methods of residue detection – Organochlorine, Organophosphates, Synthetic Pyrithroides, Systemic, Problems in fruits, vegetables, medicinal plants, Maximum permissible residue limits (MRLs).	1	Extra lecture was conducted

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Signature of Teacher **Signature of Head of Department** **Signature of Faculty In-charge** **Signature of the Principal**

Dr. J. P. Sanvade
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Name of the teacher: Prof Gunvare K.D

Semester: I **Year:** 2020-2021

Subject: Histology **Paper:** II **Class:** T Y B Sc

Part I : Teaching Plan						Part II : Evaluation of Plan			
1	2	3	4	5	6	7	8	9	10
Sr. No.	Month	Week	No. of working days	No. of periods available	Topics to be taught	No. of periods engaged	Topics taught	Deviation in periods	Remarks
1	July 2021	2 & 4	11	8	1. Introduction: Definition and Scope of Histology. 2. Definitions and Review of Types of Tissues: Epithelial tissue, Connective tissue, Nervous tissue, Muscular tissue.	8	1. Introduction: Definition and Scope of Histology. 2. Definitions and Review of Types of Tissues: Epithelial tissue, Connective tissue, Nervous tissue, Muscular tissue.	Nil	--
2	August 2021	1 &2	11	8	3. Histological study of following mammalian organs: Skin (V. S.), Tooth (V.s), Tongue (C. S.) with reference to mucosa papillae and taste buds.	9	3. Histological study of following mammalian organs: Skin (V. S.), Tooth (V.s), Tongue (C. S.) with reference to mucosa papillae and taste buds.	1	Extra lecture was conducted
3	Sept 2021	1 & 2	12	8	4. Histological study of Alimentary canal and Liver: Oesophagus (T. S.), Stomach (T. S.), Duodenum (T. S.), Rectum (T. S.), Liver (C. S.).	8	4. Histological study of Alimentary canal and Liver: Oesophagus (T. S.), Stomach (T. S.), Duodenum (T. S.), Rectum (T. S.), Liver (C. S.).	Nil	--
4	Sept 2021	3 & 4	12	8	5Histological study of Respiratory organs: Trachea (T. S.). Lung (C. S.). 6. Histological study of Excretory organs: Kidney (L. S.), Juxtaglomerular complex.	8	5Histological study of Respiratory organs: Trachea (T. S.). Lung (C. S.). 6. Histological study of Excretory organs: Kidney (L. S.), Juxtaglomerular complex.		--
5	Oct 2021	1 & 2	12	8	7. Histological study of Reproductive organs: Testis (T. S.) with reference to Seminiferous Tubules and Cells of Leydig, Ovary (C. S.).	9	7. Histological study of Reproductive organs: Testis (T. S.) with reference to Seminiferous Tubules and Cells of Leydig, Ovary (C. S.).	1	Extra lecture was conducted

					8 Histology of Endocrine glands:Pituitary gland, Thyroid gland, Adrenal gland, Pancreas (C. S.) including both exocrine and endocrine components.		8 Histology of Endocrine glands:Pituitary gland, Thyroid gland, Adrenal gland, Pancreas (C. S.) including both exocrine and endocrine components.		

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Name of the teacher: Prof Vyavhare V

Semester: I **Year: 2020-2021**

Subject: Biological Chemistry **Paper: III** **Class: T Y B Sc**

Part I : Teaching Plan						Part II : Evaluation of Plan			
1	2	3	4	5	6	7	8	9	10
Sr. No.	Month	Week	No. of working days	No. of periods available	Topics to be taught	No. of periods engaged	Topics taught	Deviation in periods	Remarks
1	July 2021	2 & 4	11	8	1. Introduction of Biochemistry: Importance of Biochemistry in Life Sciences. 2. p H and Buffers: Concept of pH, Concept of pH scale, biological significance of p H , Concept of acid and base, Ionization of acids and bases, Derivation of Henderson-Hassel Balch equation & its applications, Buffer - Definition, Concept, Functions, Types of buffer and Buffering Capacity.	8	1. Introduction of Biochemistry: Importance of Biochemistry in Life Sciences. 2. p H and Buffers: Concept of pH, Concept of pH scale, biological significance of p H , Concept of acid and base, Ionization of acids and bases, Derivation of Henderson-Hassel Balch equation & its applications, Buffer - Definition, Concept, Functions, Types of buffer and Buffering Capacity.	Nil	--
2	August 2021	1 &2	11	8	3. Carbohydrates: Definition, Classification & Biological importance of Carbohydrates Isomerism in carbohydrates - Structural and Stereoisomerism, Significance of Gluconeogenesis, Glycogenolysis and Glycogenesis, Clinical Significance - Hypoglycemia and Hyperglycemia.	9	3. Carbohydrates: Definition, Classification & Biological importance of Carbohydrates Isomerism in carbohydrates - Structural and Stereoisomerism, Significance of Gluconeogenesis, Glycogenolysis and Glycogenesis, Clinical Significance - Hypoglycemia and Hyperglycemia.	1	Extra lecture was conducted
3	Sept 2021	1 & 2	12	8	4. Amino acids and Proteins: General Structure of amino acids and Peptide bond, Essential and non-essential amino acids, Types of proteins, protein structures (primary,	8	4. Amino acids and Proteins: General Structure of amino acids and Peptide bond, Essential and non-essential amino acids, Types of proteins, protein structures (primary, secondary, tertiary	Nil	--

					secondary, tertiary and quaternary structures with suitable example), Forces responsible for their stability, Biological importance of proteins – Biocatalysts, Carrier proteins Contractile proteins, Hormonal role of proteins.		and quaternary structures with suitable example), Forces responsible for their stability, Biological importance of proteins – Biocatalysts, Carrier proteins Contractile proteins, Hormonal role of proteins.		
4	Sept 2021	3 & 4	12	8	5. Enzymes: Nomenclature, Types and properties of enzymes, Regulatory and non-regulatory enzymes, Enzyme inhibition, Factors influencing enzyme activity (pH, temperature, substrate concentration), Introduction of isoenzymes and cofactor	8	5. Enzymes: Nomenclature, Types and properties of enzymes, Regulatory and non-regulatory enzymes, Enzyme inhibition, Factors influencing enzyme activity (pH, temperature, substrate concentration), Introduction of isoenzymes and cofactor		–
5	Oct 2021	1 & 2	12	8	Clinical significance of enzymes - PKU and AKU 6. Lipids: Introduction. Fatty acids - Types and nomenclature (saturated and unsaturated), Clinical significance (obesity, atherosclerosis, myocardial infarction), Biological importance of lipids.	9	Clinical significance of enzymes - PKU and AKU 6. Lipids: Introduction. Fatty acids - Types and nomenclature (saturated and unsaturated), Clinical significance (obesity, atherosclerosis, myocardial infarction), Biological importance of lipids.	1	Extra lecture was conducted

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Name of the teacher: Prof. Dr Salunkhe R.V
Semester: I
Subject: Genetics
Year: 2020-2021

Part I : Teaching Plan **Paper: IV** **Class: T Y B Sc**

1	2	3	4	5	6	7	Part II : Evaluation of Plan 8	9	10
Sr. No.	Month	Week	No. of working days	No. of periods available	Topics to be taught	No. of periods engaged	Topics taught	Deviation in periods	Remarks
1	July 2021	2 & 4	11	8	1. Introduction to genetics: Classical and Modern concept of Gene, Cistron, Muton, Recon, Mendel's laws of Inheritance. 2 Exceptions to Mendelian Inheritance: Incomplete dominance,Co-dominance, Multiple alleles: Concept, characteristics and importance of multiple	8	1. Introduction to genetics: Classical and Modern concept of Gene, Cistron, Muton, Recon, Mendel's laws of Inheritance. 2 Exceptions to Mendelian Inheritance: Incomplete dominance,Co-dominance, Multiple alleles: Concept, characteristics and importance of multiple	Nil	--
2	August 2021	1 &2	11	8	Lethal alleles. 3. Gene Mutation: Definition, Types of mutations: spontaneous, induced, somatic, gametic, forward, reverse. Types of point mutation - deletion, insertion, substitution, transversion, transition, Mutagenic agents a) UV radiation and ionising radiation. b) Base analogs, alkylating and intercalating agents.	9	Lethal alleles. 3. Gene Mutation: Definition, Types of mutations: spontaneous, induced, somatic, gametic, forward, reverse. Types of point mutation - deletion, insertion, substitution, transversion, transition, Mutagenic agents a) UV radiation and ionising radiation. b) Base analogs, alkylating and intercalating agents.	1	Extra lecture was conducted
3	Sept 2021	1 & 2	12	8	4. Sex-determination: Introduction, Types of sex determination: -XX-XY, ZZ-ZW, XX-XO and Parthenogenesis, Hypodiploidy, Gynandromorphism. 5. Population Genetics:Basic Concepts in population genetics:	8	4. Sex-determination: Introduction, Types of sex determination: -XX-XY, ZZ-ZW, XX-XO and Parthenogenesis, Hypodiploidy, Gynandromorphism. 5. Population Genetics:Basic Concepts in population genetics: Mendelian	Nil	--

					Mendelian population, gene pool, gene / allele, Frequency, chance mating (Panmictic mating), Hardy Weinberg law and its equilibrium.		population, gene pool, gene / allele, Frequency, chance mating (Panmictic mating), Hardy Weinberg law and its equilibrium.		
4	Sept 2021	3 & 4	12	8	6. Human Population Genetics: Karyotype, Genetic disorders, Structural & numerical alterations of chromosomes (chromosomal aneuploidy - Down, Patau, Edward, Turner and Klinefelter syndromes).	8	6. Human Population Genetics: Karyotype, Genetic disorders, Structural & numerical alterations of chromosomes (chromosomal aneuploidy - Down, Patau, Edward, Turner and Klinefelter syndromes).		--
5	Oct 2021	1 & 2	12	8	7. Sex linked inheritance in human: Colour – blindness, Haemophilia, Hypertrichosis 8. Application of genetics: Genetic counselling, Diagnostics & breeding technology.	9	7. Sex linked inheritance in human: Colour – blindness, Haemophilia, Hypertrichosis 8. Application of genetics: Genetic counselling, Diagnostics & breeding technology.	1	Extra lecture was conducted

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Name of the teacher: Prof Jamdade S.P.

Year: 2020-202

Subject: Developmental Biology

Paper: V

Class: T Y B Sc

Part I : Teaching Plan

1 Sr. No.	2 Month	3 Week	4 No. of working days	5 No. of periods available	6 Topics to be taught	7 No. of periods engaged	8 Topics taught	9 Deviation in periods	10 Remarks
1	July 2021	2 & 4	11	8	**Fundamentals of Developmental Biology**: Definition and scope. Concepts in Developmental Biology: Growth, Differentiation, Dedifferentiation, Cell determination, Cell communication, Morphogenesis, Induction and Regeneration. **Theories of Developmental Biology**: Preformation, Pangenesis. Epigenesis. Axial gradient. Germplasm. **Gametogenesis:** Spermatogenesis & Structure of sperm with respect to human. 3.2 Oogenesis & Structure of ovum with respect to human. 3.3 Types of eggs.	8	**Fundamentals of Developmental Biology:** Definition and scope. Concepts in Developmental Biology: Growth, Differentiation, Dedifferentiation, Cell determination, Cell communication, Morphogenesis, Induction and Regeneration. **Theories of Developmental Biology**: Preformation, Pangenesis. Epigenesis. Axial gradient. Germplasm. **Gametogenesis:** Spermatogenesis & Structure of sperm with respect to human. 3.2 Oogenesis & Structure of ovum with respect to human. 3.3 Types of eggs.	Nil	--
2	August 2021	1 &2	11	8	**Fertilization**: Concept and types Chemotaxis. Sperm penetration: Acrosome reaction, Capacitation & Decapacitation. Activation of ovum: Fertilization cone. Prevention of polyspermy: Fast block & Slow block. Significance of fertilization. **Cleavage and Blastula:** Planes and symmetry of cleavage. Types of cleavage.	9	**Fertilization**: Concept and types Chemotaxis. Sperm penetration: Acrosome reaction, Capacitation & Decapacitation. Activation of ovum: Fertilization cone. Prevention of polyspermy: Fast block & Slow block. Significance of fertilization. **Cleavage and Blastula:** Planes and symmetry of cleavage. Types of cleavage.	1	Extra lecture was conducted
3	Sept 2021	1 & 2	12	8	**Definition and types of Blastulae**. Gastrulation: Definition and Concept. Basic cell movements in gastrulation: Epiboly, Emboly, Convergence, Invagination, Ingression & Involution with reference to frog. **Concept of Organizer**: Primary, Secondary and Tertiary.	8	**Definition and types of Blastulae**. Gastrulation: Definition and Concept. Basic cell movements in gastrulation: Epiboly, Emboly, Convergence, Invagination, Ingression & Involution with reference to frog. **Concept of Organizer**: Primary, Secondary and Tertiary.	Nil	--
4	Sept 2021	3 & 4	12	8	**Chick Embryology: 7.1 Structure of Hen's egg.**	8			--

Part II : Evaluation of Plan

5	Oct 2021	1 & 2	12	8	**Fundamentals of Developmental Biology:** Definition and scope. Concepts in Developmental Biology: Growth, Differentiation, Dedifferentiation, Cell determination, Cell communication, Morphogenesis, Induction and Regeneration. **Theories of Developmental Biology:** Preformation, Pangenesis. Epigenesis. Axial gradient. Germplasm. **Gametogenesis:** Spermatogenesis & Structure of sperm with respect to human. 3.2 Oogenesis & Structure of ovum with respect to human. 3.3 Types of eggs.	9	**Fundamentals of Developmental Biology:** Definition and scope. Concepts in Developmental Biology: Growth, Differentiation, Dedifferentiation, Cell determination, Cell communication, Morphogenesis, Induction and Regeneration. **Theories of Developmental Biology:** Preformation, Pangenesis. Epigenesis. Axial gradient. Germplasm. **Gametogenesis:** Spermatogenesis & Structure of sperm with respect to human. 3.2 Oogenesis & Structure of ovum with respect to human. 3.3 Types of eggs.	1	Extra lecture was conducted

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Name of the teacher: Prof Jamdade S.P.
Semester: I
Subject: Parasitology **Year: 2020-2021**

Part I : Teaching Plan **Paper: VI** **Class: T Y B Sc**

1	2	3	4	5	6	7	Part II : Evaluation of Plan 8	9	10
Sr. No.	Month	Week	No. of working days	No. of periods available	Topics to be taught	No. of periods engaged	Topics taught	Deviation in periods	Remarks
1	July 2021	2 & 4	11	8	1. Introduction, Scope and Branches of Parasitology:Definition: host, parasite, vector, commensalisms, mutualism and parasitism, Branches of parasitology. 2. Types of Parasites and Hosts: Ectoparasites, Endoparasites and its subtypes, Types of hosts - Intermediate, definitive, paratenic and reservoir.	8	1. Introduction, Scope and Branches of Parasitology:Definition: host, parasite, vector, commensalisms, mutualism and parasitism, Branches of parasitology. 2. Types of Parasites and Hosts: Ectoparasites, Endoparasites and its subtypes, Types of hosts - Intermediate, definitive, paratenic and reservoir.	Nil	--
2	August 2021	1 &2	11	8	3.Host - Parasite relationship: Host specificity, Types of host specificity: structural specificity, physiological specificity and ecological specificity, Effects of parasite on host. 4. Study of Parasitic Protists: Entamoeba histolytica - Morphology, Life Cycle, Prevalence, Epidemiology,	9	3.Host - Parasite relationship: Host specificity, Types of host specificity: structural specificity, physiological specificity and ecological specificity, Effects of parasite on host. 4. Study of Parasitic Protists: Entamoeba histolytica - Morphology, Life Cycle, Prevalence, Epidemiology,	1	Extra lecture was conducted
3	Sept 2021	1 & 2	12	8	Pathogenicity, Diagnosis, Prophylaxis and Treatment , Plasmodium vivax - Morphology, Life Cycle, Prevalence, Epidemiology, Pathogenicity,	8	Pathogenicity, Diagnosis, Prophylaxis and Treatment , Plasmodium vivax - Morphology, Life Cycle, Prevalence, Epidemiology, Pathogenicity, Diagnosis, Prophylaxis and Treatment.	Nil	--

					Diagnosis, Prophylaxis and Treatment.					
4	Sept 2021	3 & 4	12	8	5. Study of Parasitic worms: Ascaris lumbricoides - Study of Morphology, Life Cycle, Prevalence, Epidemiology, Pathogenicity, Diagnosis, Prophylaxis and Treatment, 5.3 Taenia solium (Tapeworm) - Study of Morphology, Life Cycle, Prevalence, Epidemiology,	8	5. Study of Parasitic worms: Ascaris lumbricoides - Study of Morphology, Life Cycle, Prevalence, Epidemiology, Pathogenicity, Diagnosis, Prophylaxis and Treatment, 5.3 Taenia solium (Tapeworm) - Study of Morphology, Life Cycle, Prevalence, Epidemiology,		--
5	Oct 2021	1 & 2	12	8	Pathogenicity, Diagnosis, Prophylaxis and Treatment 6. Study of Parasitic Arthropoda: Morphology, pathogenicity and control measures of – Soft tick, Head louse, Rat flea, Bed bug	9	Pathogenicity, Diagnosis, Prophylaxis and Treatment 6. Study of Parasitic Arthropoda: Morphology, pathogenicity and control measures of – Soft tick, Head louse, Rat flea, Bed bug	1	Extra lecture was conducted	

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TEACHING AND EVALUATION PLAN

Name of the teacher: Prof .Jamdade S.P.	**Year:** 2020-21		**Semester:** VI
Subject: ZO 361 - Medical & Forensic Zoology		**Paper:** I	**Class:** T Y B Sc

Part I : Teaching Plan						Part II : Evaluation of Plan			
1	2	3	4	5	6	7	8	9	10
Sr. No.	Month	Week	No. of working days	No. of periods available	Topics to be taught	No. of periods engaged	Topics taught	Deviation in periods	Remarks
1	Nov2020	3 & 4	9	8	1. Introduction to medical zoology and its importance 2. Medico-legal Autopsy: Death and its Causes- External examination of deceased body – Internal Examination - Determination of time since death and cause of death, Injuries – Classification - Medico-legal aspects of injuries, Post-mortem changes - collection of post-mortem samples and Preservation.	8	1. Introduction to medical zoology and its importance 2. Medico-legal Autopsy: Death and its Causes- External examination of deceased body – Internal Examination - Determination of time since death and cause of death, Injuries – Classification - Medico-legal aspects of injuries, Post-mortem changes - collection of post-mortem samples and Preservation.	Nil	---
2	Dec 2020	1& 2	12	8	3. Urine Analysis: Physical characteristics, abnormal constituents, renal failure, renal calculi, dialysis. 4. Non infectious Diseases: Causes, Types, Symptoms, Complications, Diagnosis and Prevention of	10	3. Urine Analysis: Physical characteristics, abnormal constituents, renal failure, renal calculi, dialysis. 4. Non infectious Diseases: Causes, Types, Symptoms, Complications, Diagnosis and Prevention of Diabetes (Type I and II), Hypertension,	1	Extra lecture was conducted

					Diabetes (Type I and II), Hypertension, Hypotension, Obesity, Atherosclerosis, Myocardial Infraction.		Hypotension, Obesity, Atherosclerosis, Myocardial Infraction.		
3	Dec 2020	3 & 4	11	7	5. Infectious Diseases: Causes, Types, Symptoms, Complications, Diagnosis and Prevention of Tuberculosis and Hepatitis. 6. Introduction to Forensic Zoology: Definition, Scope and Application of Forensic Zoology, Forensic Laboratories in India, Basic Principles of Forensic Science with Examples	8	5. Infectious Diseases: Causes, Types, Symptoms, Complications, Diagnosis and Prevention of Tuberculosis and Hepatitis. 6. Introduction to Forensic Zoology: Definition, Scope and Application of Forensic Zoology, Forensic Laboratories in India, Basic Principles of Forensic Science with Examples	Nil	---
4	January 2021	1 &2	11	8	7. Forensic Medicine: Introduction to Forensic Medicine: Definitions of Forensic Medicine, Medical Jurisprudence, Medical evidence documentations. 8. Forensic Analysis: Examination of Biological Materials: Examination of Hair, Fibres, Diatoms, plants materials, human tissues, Examination of Body Fluid: Blood, Semen and Saliva, Forensic Importance of Insects: Insects of forensic importance - indicators of time of death stages of insect development & comparative decomposition of human body - colonization - Evidence collection of insects – Territorial & Aquatic Insects.	8	7. Forensic Medicine: Introduction to Forensic Medicine: Definitions of Forensic Medicine, Medical Jurisprudence, Medical evidence documentations. 8. Forensic Analysis: Examination of Biological Materials: Examination of Hair, Fibres, Diatoms, plants materials, human tissues, Examination of Body Fluid: Blood, Semen and Saliva, Forensic Importance of Insects: Insects of forensic importance - indicators of time of death stages of insect development & comparative decomposition of human body - colonization - Evidence collection of insects – Territorial & Aquatic Insects.	Nil	---

5	January 2021	3 & 4	12	8	8.4 DNA Fingerprint Technique and Examination of Biological Traces: Liquid blood, blood stains, & swabs, semen, Seminal stains, tissues, Bones, Hairs, Teeth, Saliva, Skeletal remains, Toxicological Investigations: Poisons – Definition, Forms of Poison – Physical, Chemical & Mechanical state. Introduction with examples of – Neurotoxic Poisons – Cerebral & Spinal, Cardiovascular Poisons, Asphyxiants, Miscellaneous poisons – Pesticides, Pharmaceutical drugs, Petroleum poisons, Food poisons, Radioactive poisons.	8	8.4 DNA Fingerprint Technique and Examination of Biological Traces: Liquid blood, blood stains, & swabs, semen, Seminal stains, tissues, Bones, Hairs, Teeth, Saliva, Skeletal remains, Toxicological Investigations: Poisons – Definition, Forms of Poison – Physical, Chemical & Mechanical state. Introduction with examples of – Neurotoxic Poisons – Cerebral & Spinal, Cardiovascular Poisons, Asphyxiants, Miscellaneous poisons – Pesticides, Pharmaceutical drugs, Petroleum poisons, Food poisons, Radioactive poisons.	Nil	---

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Name of the teacher: Prof Gunvare K.D. **Year: 2020-21** **Semester: VI**

Subject: ZO 362 - Animal Physiology **Paper: II** **Class: T Y B Sc**

Part I : Teaching Plan						Part II : Evaluation of Plan			
1	2	3	4	5	6	7	8	9	10
Sr. No.	Month	Week	No. of working days	No. of periods available	Topics to be taught	No. of periods engaged	Topics taught	Deviation in periods	Remarks
1	Nov2020	3 & 4	9	8	1. Nutrition and digestion: Nutritional requirement & balanced diet, Digestion and absorption of carbohydrates, proteins and lipids, Vitamins - outline of fat soluble and water-soluble vitamins; Sources, deficiency and diseases. 2. Respiration: Mechanism of respiration: Regulation of ventilation in lungs, exchange of gases at respiratory surface	8	1. Nutrition and digestion: Nutritional requirement & balanced diet, Digestion and absorption of carbohydrates, proteins and lipids, Vitamins - outline of fat soluble and water-soluble vitamins; Sources, deficiency and diseases. 2. Respiration: Mechanism of respiration: Regulation of ventilation in lungs, exchange of gases at respiratory surface	Nil	---
2	Dec 2020	1& 2	12	8	Respiratory pigments in animals: Haemoglobin, Hemocyanin, Hemerythrin, Chlorocruorin, Transport of gases : O2 and CO2 transport. 3. Circulation: Blood: Definition and its constituents, functions of blood, Heart: Structure of human heart, Pace maker, Cardiac Cycle, Origin and conduction of heart beat.	10	Respiratory pigments in animals: Haemoglobin, Hemocyanin, Hemerythrin, Chlorocruorin, Transport of gases : O2 and CO2 transport. 3. Circulation: Blood: Definition and its constituents, functions of blood, Heart: Structure of human heart, Pace maker, Cardiac Cycle, Origin and conduction of heart beat.	Nil	---

3	Dec 2020	3 & 4	11	7	4. Excretion: Structure of Uriniferous tubule, Mechanism of urine formation, Normal and abnormal constituents of urine, Elementary idea of dialysis. 5. Muscles: Structure of smooth, skeletal and cardiac muscles.	8	4. Excretion: Structure of Uriniferous tubule, Mechanism of urine formation, Normal and abnormal constituents of urine, Elementary idea of dialysis. 5. Muscles: Structure of smooth, skeletal and cardiac muscles.	1	Extra lecture was conducted
4	January 2021	1 &2	11	8	Mechanism of muscle contraction by Sliding filament theory. 6. Reproduction and Endocrine Glands: Physiology of male reproduction, hormonal control of spermatogenesis.	8	Mechanism of muscle contraction by Sliding filament theory. 6. Reproduction and Endocrine Glands: Physiology of male reproduction, hormonal control of spermatogenesis.	Nil	---
5	January 2021	3 & 4	12	8	Physiology of female reproduction, hormonal control of menstrual cycle, Structure and functions of pituitary, thyroid, parathyroid, pancreas and adrenal glands.	8	Physiology of female reproduction, hormonal control of menstrual cycle, Structure and functions of pituitary, thyroid, parathyroid, pancreas and adrenal glands.	Nil	---

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Signature Of Teacher **Signature Of Head Of Department** **Signature Of Faculty Incharge** **Signature of Principal**

Dr. J. P. Sarwade
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Name of the teacher: Prof Jamdade S.P **Year: 2020-21**

Subject: Molecular Biology **Paper: III** **Class: T Y B Sc** **Semester: VI**

Part I : Teaching Plan						Part II : Evaluation of Plan			
1	2	3	4	5	6	7	8	9	10
Sr. No.	Month	Week	No. of working days	No. of periods available	Topics to be taught	No. of periods engaged	Topics taught	Deviation in periods	Remarks
1	Nov2020	3 & 4	9	8	1. Nucleic Acids and Chromatin: Structure of RNA & DNA, Types of RNA, DNA as genetic material - evidences (Griffith's, Avery et al., Hershey and Chase experiment), RNA as genetic material - TMV 4, Structure of Chromatin, packaging of DNA, Heterochromatin, Euchromatin.	8	1. Nucleic Acids and Chromatin: Structure of RNA & DNA, Types of RNA, DNA as genetic material - evidences (Griffith's, Avery et al., Hershey and Chase experiment), RNA as genetic material - TMV 4, Structure of Chromatin, packaging of DNA, Heterochromatin, Euchromatin.	Nil	---
2	Dec 2020	1& 2	12	8	2. Central Dogma of Molecular Biology: DNA Replication - Semiconservative (Messelson and Stahl experiment), Basic mechanism of replication in prokaryotes and eukaryotes	10	2. Central Dogma of Molecular Biology: DNA Replication - Semiconservative (Messelson and Stahl experiment), Basic mechanism of replication in prokaryotes and eukaryotes	Nil	---
3	Dec 2020	3 & 4	11	7	Transcription - Basic mechanism of transcription in prokaryotes and eukaryotes, RNA polymerase enzyme in prokaryotes. RNA modifications and processing (splicing - mRNA, modifications at 3'and 5' end).	8	Transcription - Basic mechanism of transcription in prokaryotes and eukaryotes, RNA polymerase enzyme in prokaryotes. RNA modifications and processing (splicing - mRNA, modifications at 3'and 5' end).	Nil	---

4	January 2021	1 &2	11	8	Translation - Genetic code, properties of genetic code, Basic mechanism of Translation in E. coli and eukaryotic cells. 3. Lac operon: 4. DNA repair mechanism: Photo repair, dark repair, base excision repair.	8	Translation - Genetic code, properties of genetic code, Basic mechanism of Translation in E. coli and eukaryotic cells. 3. Lac operon: 4. DNA repair mechanism: Photo repair, dark repair, base excision repair.	1	Extra lecture was conducted
5	January 2021	3 & 4	12	8	5. Recombinant DNA Technology: Introduction, restriction enzymes, cloning vector, PCR (polymerase chain reaction), DNA finger printing.	8	5. Recombinant DNA Technology: Introduction, restriction enzymes, cloning vector, PCR (polymerase chain reaction), DNA finger printing.	1	Extra lecture was conducted

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Name of the teacher: Prof Dr. Salunkhe R.V. **Year:** 2020-21 **Semester:** VI

Subject: Entomology **Paper:** IV **Class:** T Y B Sc

Part I : Teaching Plan						Part II : Evaluation of Plan			
1	2	3	4	5	6	7	8	9	10
Sr. No.	Month	Week	No. of working days	No. of periods available	Topics to be taught	No. of periods engaged	Topics taught	Deviation in periods	Remarks
1	Nov2020	3 & 4	9	8	1. Fundamentals of Entomology: Definition and scope of Entomology, General Classification of Insects,General Characters of Insects. 2. Insect Morphology: Insect Integument and its derivatives, Insect Head, Head Orientations, Head articulations, Insect antennae and Mouth parts.	8	1. Fundamentals of Entomology: Definition and scope of Entomology, General Classification of Insects,General Characters of Insects. 2. Insect Morphology: Insect Integument and its derivatives, Insect Head, Head Orientations, Head articulations, Insect antennae and Mouth parts.		
2	Dec 2020	1& 2	12	8	2.3 Insect Thorax, Insect Wing and modifications, Insect Leg and Modifications – a) Cursorial – Cockroach, b) Fossorial – Mole cricket, c) Saltorial – Grasshopper, d) Raptorial – Praying mantis, e) Pollen basket – Honey bee, Insect Abdomen, Genital and Pre – genital appendages of Grasshopper	10	2.3 Insect Thorax, Insect Wing and modifications, Insect Leg and Modifications – a) Cursorial – Cockroach, b) Fossorial – Mole cricket, c) Saltorial – Grasshopper, d) Raptorial – Praying mantis, e) Pollen basket – Honey bee, Insect Abdomen, Genital and Pre – genital appendages of Grasshopper 3. Insect Anatomy (Grasshopper): Digestive System, Circulatory System	Nil	---

					3. Insect Anatomy (Grasshopper): Digestive System, Circulatory System				
3	Dec 2020	3 & 4	11	7	Nervous System, Respiratory System, Reproductive System. 4. Insect Ecology: Definition of Insect Ecology, Abiotic Factors (Photoperiod, Temperature and Humidity) and Biotic Factors (Food, Foraging and Nesting), Mimicry in insects with suitable examples.	8	Nervous System, Respiratory System, Reproductive System. 4. Insect Ecology: Definition of Insect Ecology, Abiotic Factors (Photoperiod, Temperature and Humidity) and Biotic Factors (Food, Foraging and Nesting), Mimicry in insects with suitable examples.	Nil	---
4	January 2021	1 &2	11	8	5. Insect Metamorphosis: Definition, Types and examples of Metamorphosis. 6. Insects as social groups: Definition & significance of Eusociality, Intraspecific and Interspecific relationships among insects.	8	5. Insect Metamorphosis: Definition, Types and examples of Metamorphosis. 6. Insects as social groups: Definition & significance of Eusociality, Intraspecific and Interspecific relationships among insects.	Nil	---
5	January 2021	3 & 4	12	8	Social organization in Wasps and Termites. 7. Economic Importance of Insects: Insects in Research, Insects in Medicines and Cosmetics, Insects as Vectors, Insects as food.	8	Social organization in Wasps and Termites. 7. Economic Importance of Insects: Insects in Research, Insects in Medicines and Cosmetics, Insects as Vectors, Insects as food.	Nil	---

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Signature Of Teacher **Signature Of Head Of Department** **Signature Of Faculty Incharge** **Signature of Principal**

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Name of the teacher: Prof Prof Dr Salunkhe R.V. **Year:** 2020-21 **Semester:** VI

Subject: ZO 365 - Techniques in Biology **Paper:** V **Class:** T Y B Sc

Part I : Teaching Plan						Part II : Evaluation of Plan			
1	2	3	4	5	6	7	8	9	10
Sr. No.	Month	Week	No. of working days	No. of periods available	Topics to be taught	No. of periods engaged	Topics taught	Deviation in periods	Remarks
1	Nov2020	3 & 4	9	8	1.Microscopy: Definitions - Resolving Power, Limit of Resolution and Magnification, Numerical Aperture. Basic principle of microscopes - Light, Fluorescence, Phase Contrast, Stereo Microscope, SEM and TEM. 2. Microtomy: Tissue fixation and Processing, Methods of tissue fixation: Chemical fixation and physical fixation, Procurement of tissue and importance of fixation of tissues, Dehydration, clearing, impregnation, embedding and block making.	8	1.Microscopy: Definitions - Resolving Power, Limit of Resolution and Magnification, Numerical Aperture. Basic principle of microscopes - Light, Fluorescence, Phase Contrast, Stereo Microscope, SEM and TEM. 2. Microtomy: Tissue fixation and Processing, Methods of tissue fixation: Chemical fixation and physical fixation, Procurement of tissue and importance of fixation of tissues, Dehydration, clearing, impregnation, embedding and block making.	Nil	---
2	Dec 2020	1& 2	12	8	Types of microtomes, Section cutting: steps and precautions, common faults in section cutting, reasons & remedies, Mounting and spreading of ribbons, General procedure for staining of sections, Demonstration of Nucleic acid (Feulgen Reaction). 3. Haematological Techniques: Total count of RBCs, WBCs and Differential count of WBCs and their significance,	10	Types of microtomes, Section cutting: steps and precautions, common faults in section cutting, reasons & remedies, Mounting and spreading of ribbons, General procedure for staining of sections, Demonstration of Nucleic acid (Feulgen Reaction). 3. Haematological Techniques: Total count of RBCs, WBCs and Differential count of	1	Extra lecture was conducted

					Bleeding time, clotting time and their significanc		WBCs and their significance, Bleeding time, clotting time and their significanc		
3	Dec 2020	3 & 4	11	7	4. Immunological Techniques: Antigen-Antibody Interactions – Immunodiffusion, Principle & Working of ELISA, Raising Monoclonal Antibodies, Application of Immunological techniques in disease diagnosis. 5. Types of PCR & DNA Barcoding :	8	4. Immunological Techniques: Antigen-Antibody Interactions – Immunodiffusion, Principle & Working of ELISA, Raising Monoclonal Antibodies, Application of Immunological techniques in disease diagnosis. 5. Types of PCR & DNA Barcoding :	Nil	---
4	January 2021	1 &2	11	8	6. Methods in Biodiversity: Introduction to sampling and sample size, Biodiversity Indices - Species richness, Simpson Diversity Index, Shannon Diversity Index, Measuring Biodiversity- Quadrat sampling, Transect sampling, Insect survey - Active (sweep netting, aquatic nets) and Passive methodology (Pit fall traps, Light traps).	8	6. Methods in Biodiversity: Introduction to sampling and sample size, Biodiversity Indices - Species richness, Simpson Diversity Index, Shannon Diversity Index, Measuring Biodiversity- Quadrat sampling, Transect sampling, Insect survey - Active (sweep netting, aquatic nets) and Passive methodology (Pit fall traps, Light traps).	Nil	---
5	January 2021	3 & 4	12	8	7. Instruments in Field Biology: Binoculars, GPS, Basic digital camera techniques: Camera lens - prime and kit lens, Aperture mode, Shutter mode, Megapixels, Telephoto lens, macro lens, Adapters for camera and microscopes, Mobile's camera. 8. Laboratory techniques: Microphotographic techniques - CCD and CMOS camera, digital camera, Software for image analysis - Image J and GIMP.	8	7. Instruments in Field Biology: Binoculars, GPS, Basic digital camera techniques: Camera lens - prime and kit lens, Aperture mode, Shutter mode, Megapixels, Telephoto lens, macro lens, Adapters for camera and microscopes, Mobile's camera. 8. Laboratory techniques: Microphotographic techniques - CCD and CMOS camera, digital camera, Software for image analysis - Image J and GIMP.	Nil	---

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Signature Of Teacher

Signature Of Head Of Department

Dr. J. P. Sanmade
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Department of
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Signature Of Faculty Incharge

Faculty
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Signature of Principal

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Name of the teacher: Prof. Mengade N.S. **Year:** 2020-21 **Semester:** VI

Subject: ZO 366 - Evolutionary Biology **Paper:** VI **Class:** T Y B Sc

Part I : Teaching Plan						Part II : Evaluation of Plan			
1	2	3	4	5	6	7	8	9	10
Sr. No.	Month	Week	No. of working days	No. of periods available	Topics to be taught	No. of periods engaged	Topics taught	Deviation in periods	Remark
1	Nov2020	3 & 4	9	8	1. Introduction: Concept of Evolution, Origin of life, Origin of eukaryotic cell (Origin of mitochondria, plastids & symbionts).	8	1. Introduction: Concept of Evolution, Origin of life, Origin of eukaryotic cell (Origin of mitochondria, plastids & symbionts).	Nil	---
2	Dec 2020	1& 2	12	8	2. Evidences of Evolution: Analogy and Homology, Embryological Evidences of Evolution, Evolutionary & Paleontological. Evidences 3. Historical Review of Evolutionary Concept: Theories of Evolution, Lamarckism, Darwinism and Neo Darwinism.	10	2. Evidences of Evolution: Analogy and Homology, Embryological Evidences of Evolution, Evolutionary & Paleontological. Evidences 3. Historical Review of Evolutionary Concept: Theories of Evolution, Lamarckism, Darwinism and Neo Darwinism.	Nil	---
3	Dec 2020	3 & 4	11	7	Mutation Theory, Modern Synthetic theory. 4. Sources of Variations: Variation and Mutations 5. Isolation 6. Speciation: Types of speciation (Allopatric & Sympatric), Mechanism of speciation, Patterns of speciation.	8	Mutation Theory, Modern Synthetic theory. 4. Sources of Variations: Variation and Mutations 5. Isolation 6. Speciation: Types of speciation (Allopatric & Sympatric), Mechanism of speciation, Patterns of speciation.	Nil	---

4	January 2021	1 &2	11	8	Factors influencing speciation. 7 Population Genetics: Hardy-Weinberg Law & Genetic Drift, Types of Natural Selection.	8	Factors influencing speciation. 7 Population Genetics: Hardy-Weinberg Law & Genetic Drift, Types of Natural Selection.	1	Extra lecture was conducte
5	January 2021	3 & 4	12	8	8 Origin of Man: Evolution of Man (Evolution of anthropoids including man) - Kenyapithecus to Homo sapiens. 9 Zoogeographical Realms With reference to fauna 10 Extinctions: Extinction - An Overview.	8	8 Origin of Man: Evolution of Man (Evolution of anthropoids including man) - Kenyapithecus to Homo sapiens. 9 Zoogeographical Realms With reference to fauna 10 Extinctions: Extinction - An Overview.	1	Extra lecture was conducte

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Name of the teacher: Prof. Mohite P.I. **Year:** 2020-21 **Semester:** VI

Subject: Environmental impact assessment **Paper:** - **Class:** T Y B Sc

Part I : Teaching Plan						Part II : Evaluation of Plan			
1	2	3	4	5	6	7	8	9	10
Sr. No.	Month	Week	No. of working days	No. of periods available	Topics to be taught	No. of periods engaged	Topics taught	Deviation in periods	Remarks
1	Nov2020	3 & 4	9	8	Environment: Definition, Divisions, Importance. 2. Pollution: Definition and types, Impact on wildlife, natural resources, development.	8	Environment: Definition, Divisions, Importance. 2. Pollution: Definition and types, Impact on wildlife, natural resources, development.	Nil	---
2	Dec 2020	1& 2	12	8	3. Sustainable development: Definition and need, Exploitation of natural resources, Concept of carrying capacity, Three pillars of Sustainability, UN 17 Sustainable Development Goals (SDGs). 4. Overview of Environmental Protection acts: The Air (Prevention and Control of Pollution) Act 1981.The Water (Prevention and Control of Pollution) Act 1974.	10	3. Sustainable development: Definition and need, Exploitation of natural resources, Concept of carrying capacity, Three pillars of Sustainability, UN 17 Sustainable Development Goals (SDGs). 4. Overview of Environmental Protection acts: The Air (Prevention and Control of Pollution) Act 1981.The Water (Prevention and Control of Pollution) Act 1974.	Nil	---
3	Dec 2020	3 & 4	11	7	The Environment Protection Act 1986, The National Green Tribunal Act 2010, Biological Diversity Act 2002. 5. Environmental Impact Assessment (EIA): Definition, need and importance of EIA, EIA notification 2006 - key elements, History and Evolution of EIA, Categories of Industries / establishments requiring EIA, Types of EIA - strategic EIA, regional EIA,	8	The Environment Protection Act 1986, The National Green Tribunal Act 2010, Biological Diversity Act 2002. 5. Environmental Impact Assessment (EIA): Definition, need and importance of EIA, EIA notification 2006 - key elements, History and Evolution of EIA, Categories of Industries / establishments requiring EIA, Types of EIA - strategic EIA, regional EIA,	Nil	---

					sectoral EIA, project level EIA and life cycle assessment, Rapid and comprehensive EIA.		sectoral EIA, project level EIA and life cycle assessment, Rapid and comprehensive EIA.		
4	January 2021	1 &2	11	8	6. EIA Process: Screening, Scoping and consideration of alternatives, Baseline data collection, Impact analysis, Mitigation, Reporting, Public hearing, Review of EIA, Decision-making, monitoring clearance conditions. 7. Stakeholders in EIA process: Project proponent, Environmental consultant. CPCB / MPCB, Public, EIA agency (IAA).	8	6. EIA Process: Screening, Scoping and consideration of alternatives, Baseline data collection, Impact analysis, Mitigation, Reporting, Public hearing, Review of EIA, Decision-making, monitoring clearance conditions. 7. Stakeholders in EIA process: Project proponent, Environmental consultant. CPCB / MPCB, Public, EIA agency (IAA).	Nil	---
5	January 2021	3 & 4	12	8	8. Overview of Scheme for Accreditation of EIA Consultant Organizations (NABET / QCI): Eligibility and benefits, EIA coordinator (EC), Functional area experts (FAEs), Functional area associate (FAA) and team members: Role, educational qualification, experience and functions.	8	8. Overview of Scheme for Accreditation of EIA Consultant Organizations (NABET / QCI): Eligibility and benefits, EIA coordinator (EC), Functional area experts (FAEs), Functional area associate (FAA) and team members: Role, educational qualification, experience and functions.	Nil	---

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Name of the teacher: Prof. Pawar A.H
Semester: I
Year: 2021-22
Subject: Pest management
Paper: I
Class: T Y B Sc

Part I : Teaching Plan						Part II : Evaluation of Plan			
1	2	3	4	5	6	7	8	9	10
Sr. No.	Month	Week	No. of working days	No. of periods available	Topics to be taught	No. of periods engaged	Topics taught	Deviation in periods	Remarks
1	July 2021	2 & 4	11	8	1. Pest: Definition, Types of pests, Types of damages caused by the pest. 2. Pest management using Regulatory control: Quarantine, Eradication, Control districts, "Crop-free" periods.	8	1. Pest: Definition, Types of pests, Types of damages caused by the pest. 2. Pest management using Regulatory control: Quarantine, Eradication, Control districts, "Crop-free" periods.	Nil	--
2	August 2021	1 &2	11	8	3. Pest management using Cultural control:Sanitation,Tillage,Crop rotation. Cropping systems. 4. Pest management using Biological control: Ecological considerations, Biological control of insects, Biological control of plant disease, Biological control of weeds.	9	3. Pest management using Cultural control:Sanitation,Tillage,Crop rotation. Cropping systems. 4. Pest management using Biological control: Ecological considerations, Biological control of insects, Biological control of plant disease, Biological control of weeds.	1	Extra lecture was conducted
3	Sept 2021	1 & 2	12	8	5. Biotechnology approaches in pest management: Introduction. Recent advance in use of fungi and viruses. Methodology in Biotechnology, Somaclonal variability, Concept of Genetic engineering and Transgenic plants.	8	5. Biotechnology approaches in pest management: Introduction. Recent advance in use of fungi and viruses. Methodology in Biotechnology, Somaclonal variability, Concept of Genetic engineering and Transgenic plants.	Nil	--
4	Sept 2021	3 & 4	12	8	6. Integrated pest management (IPM): Principles and its components, Advantages and disadvantages, Biological control -	8	6. Integrated pest management (IPM): Principles and its components, Advantages and disadvantages, Biological control - Predators,		--