

CONTENT: SECONDARY LEVEL

UNIT-1

S.No.	TOPIC	Page No.
1	Taxonomy basics	1-6
2	Taxonomical Aids	7-11
3	Five Kingdom System	12-16

CONTENT SECONDARY LEVEL

UNIT-2

S.No.	TOPIC	Page No.
1	ANIMAL TISSUE	1-13
2	PLANT ANATOMY	14-36
3	INFLORESCENCE	37-40
4	FLOWER	41-47
5	FRUITS	48-54

Unit-3
Plant Physiology
CONTENT

S.No.	TOPIC	Page No.
1	PLANT-WATER RELATION	1-27
2	TRANSPIRATION	28-37
3	PHOTOSYNTHESIS	38-49
4	CELLULAR RESPIRATION	50-61
5	Mineral NUTRITION IN PLANTS	62-68
6	PLANT MOVEMENTS	69-76
7	NITROGEN METABOLISM: -NITROGEN CYCLE	77-81
8	FATTY ACID METABOLISM	82-87
9	GROWTH	88-90
10	AUXINE	91-94
11	GIBBERALIN	95-96
12	CYTOKININS	97-98
13	ABSCISIC ACID:	99
14	ETHYLENE	100-101

Unit-4
Animal Physiology
CONTENTS

S.No.	TOPIC	Page No.
1	Digestion and absorption	1-19
2	Breathing and Respiration	20-30
3	Body fluids and circulation	31-47
4	Excretory product and their elimination	48-66
5.	Locomotion and movement- Muscular System	67-76
6.	Locomotion and movement -Skeletal System	77-94
7.	Neural control and coordination-Neuron	95-109
8.	Neural Control And Coordination-Nervous System	110-121
9.	Sense Organ: - Eye	122-129
10.	Sense Organ - Ear	130-139
11.	Chemical coordination and regulation.	140-167
12.	Physiology of Reproduction	168-176

UNIT-5
CONTENT

S.No.	TOPIC	Page No.
1	Mendelian Genetics	1-7
2	Interaction of Genes	8-9
3	Inheritance of Traits in Human	10-14
4	Chromosomal theory of inheritance	15-19
5.	Linkage	20-25
6.	Crossing Over	26-30
7.	Sex Determination	31-32
8.	Theories for Origin of Life	33-38
9.	Theories of Organic Evolution	39-42
10.	Evidences of Organic Evolution	43-47
11.	The Geological Time Scale	48-49
12.	Types of Evolution	50-52
13.	Human Evolution	53-58

UNIT-6
CONTENT

S.No.		Page No.
1	Economic Importance of Protozoa	1-2
2	ECONOMIC IMPORTANCE OF HELMINTHES	3-4
3	ECONOMIC IMPORTANCE OF INSECTS	5-11
4	ECONOMIC IMPORTANCE OF MOLLUSCA PEARL CULTURE	12-13
5	Cereals (wheat , Rice)	14-18
6	Fiber yielding plants (cotton, Jute)	19-32
7	Vegetable oils (Groundnut, Mustard)	33-40
8	Medicinal Plants (Commiphora , witharnia)	41-42
9	Spices (Coriandor, Fenugreek and cumin)	43-46
10	Beverages (Tea, Coffee)	47-62
11	VACCINES	63-66
12	Pathogens	67-72
13	Cancer	73-76
14	AIDS	77-79

Unit-7
Ecology and Environment

CONTENT

S.No.	TOPIC	Page No.
1	organism and its environment	1-2
2	BIOGEOCHEMICAL CYCLES	3-5
3	AIR POLLUTION	6-15
4	Water Pollution	16-18
5	Noise Pollution	19-20
6	Soil pollution	21-30

GRADUATION LEVEL

CONTENT -Unit-1

S.No.	TOPIC	Page No.
1	Concept of Cell Theory; Structure of Prokaryotic and Eukaryotic cell; Plant and Animal cell	1-6
2	Structure, properties and functions of cell surface - cell process	7-37
3	Cell organelles-structure and function.	38-59
4	Cell cycle; cell division - mitosis, meiosis and their significance	60-66
5	Chromosomes – Structure, types, aberrations	67-75
6	Biomolecules - Structure and functions of proteins, carbohydrates, lipids, nucleic acids	76--119
7	Enzymes – Types, properties and enzyme action	120-128

Content: Unit-2

S.No.	TOPIC	Page No.
1	Basics of Classification	1-3
2	COELOM	4-6
3	SYMMETRY	7-13
4	ARTHROPODISATION	13-14
5.	Metamerism	15-21
6.	Protozoa	22-31
7.	Phylum Porifera Classification	32-34
8.	Phylum Coelenterata (Cnidaria)	35-40
9.	Phylum:- Ctenophora	41-42
10.	Phylum Platyhelminthes (flatworms)	43-48
11.	OLD Classification of phylum Aschelminthes	49-54
12.	Phylum Nematoda Characteristics	55-58
13.	Phylum Annelida	59-62
14.	Phylum Arthropoda Characteristics	63-85
15.	Phylum Mollusca (Mollusks)	86-95
16.	Phylum Echinodermata	96-103
17.	CLASSIFICATION OF CHORDATA	104-112
18	[1] Super Class – Pisces	113-116
19	[2] Superclass - Tetrapoda	117-121
20	REPTILIA	122-127
21	CLASS – AVES	128-132
22	CLASS – MAMMALIA	133-151
23	Plant families: Ranunculaceae	152-154
24	Plant families: APIACEAE (UMBELLIFERAE)	155-157
25	Plant families: Asterceae (compositae)	158-161
26	Plant families: Poaceae (Gramineae)	162-167

UNIT-3
TYPE STUDIES
CONTENT

S.No.	TOPIC	Page No.
1	Amoeba	1-11
2	Obelia	12-17
3	Taenia Solium	18-30
4	Ascaris	31-38
5	Earthworm	39-67
6.	Cockroach	68-77
7.	Rana Tigerina	78-84
8	Rabbit	85-102

UNIT-4 plant Groups
CONTENT

S.No.	TOPIC	Page No.
1	ALGAE	01-39
2	FUNGI (MYCOTA)	40-65
3	Lichen	66-76
4	BRYOPHYTA	77-83
5	PTERIDOPHYTA	84-75
6	GYMNOSPERM	96-102

UNIT-5
Embryology
CONTENT

S.No.	TOPIC	Page No.
1	Important Terms and History	1-7
2	Gametogenesis	8-13
3	Oogenesis	14-20
4	Fertilization	21-27
5	Cleavage	28-31
6.	Blastulation	32-33
7.	Fate map	34-36
8	Morphogenetic Movements	37-38
9.	Gastrulation in Vertebrate Embryos	39-45
10.	Embryonic Induction	46-53
11	Regeneration	54-59
12.	Metamorphosis	60-61
13.	Extra-Embryonic Membranes in Chick	62-64
14	Placenta in Mammals	65-67
15.	Reproductive Cycles	68-72
16.	Pregnancy	73-75
17.	Parturition	76-79
18.	Lactation	80-81

UNIT-6 Reproduction in plants

CONTENT

S.No.	TOPIC	Page No.
1	Vegetative, Asexual and Sexual Reproduction	1-20
2	Pollination	21-24
3	Fertilization	25-28
4	Development of Embryo	29-33

UNIT-7 Ethology

CONTENT

S.No.	TOPIC	Page No.
1	TOPIC:- FEEDING BEHAVIOR	1-20
2	TOPIC:- LEARNING BEHAVIOR	21-29
3	TOPIC: Drive, Urge Or Motivation in Animals	30-33
4	TOPIC : SOCIAL BEHAVIOR	34-55
5	TOPIC : REPRODUCTIVE BEHAVIOR	56-64

Unit-8

Biostatistics

CONTENTS

S.No.	TOPIC	Page No.
1	Mean, Median and Mode	1-12
2	Standard Deviation	13-15
3	Tabular and graphical representation of data-table	16-23
4	histogram, Pie diagram, bar diagram, line graph	24-33

POST GRADUATION LEVEL

Unit-1 & 5 Ecology & Biodiversity

CONTENT

S.No.	TOPIC	Page No.
1	<u>Environmental factors (climatic, edaphic and biotic)</u>	1-14
2	<u>ADAPTATIONS</u>	15-21
3	<u>POPULATION ECOLOGY</u>	22-28
4	<u>Ecosystems- components, types, energy flow;</u> <u>Food chain, food web.</u>	29-39
5.	<u>ECOLOGICAL SUCCESSION IN A COMMUNITY</u>	40-47
6.	<u>ENDEMISM</u>	48-52
7.	<u>BIODIVERSITY & CONSERVATION</u>	53-56
8	<u>Hot Spots of Biodiversity</u>	57-61
9	<u>Threats to Biodiversity Causes of species extinction</u>	62-64
10	<u>Biosphere reserves, wild life sanctuaries and National Parks</u>	65-76
11	<u>Threatened Plants of Rajasthan</u>	77-78

Unit-2 Biotechnology

CONTENT

S.No.	TOPIC	Page No.
1	History & Scope Of Biotechnology	1-11
2	Recombinants DNA Technology	12-24
3	Important Techniques of RDT	25-30
4	Plant Tissue Culture	31-58
5.	Animal Cell Culture	59-64
6.	Animal And Plant Transgenics	65-85

UNIT-3 TECHNIQUES

S.No.	TOPIC	Page No.
1	Chromatography	01-16
2	Electrophoresis	17-27
3	Centrifugation	28-30
4	Colorimetry	31-34
5.	Spectrophotometer	35-37
6.	ELISA	38-40

Unit-4 Microscopy

CONTENT

S.No.	TOPIC	Page No.
1	Microscopic techniques :History	1-2
2	LIGHT MICROSCOPY	3-5
3	phase contrast microscopy	6-7
4	Electron Microscopy	8-18