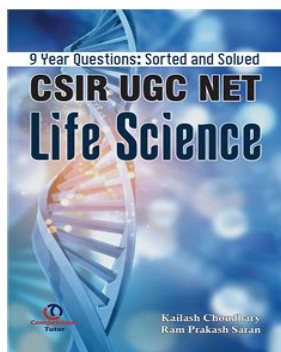


9 Year Questions: Sorted and Solved CSIR UGC NET Life Science



Kailash Choudhary & R.P. Saran

ISBN	: 9789389832198	Book Format	: Book
E-ISBN	: 9789389832204	Binding	: Paper Back
Language	: English	Edition	: 1
Imprint	: Competition Tutor	© Year	: 2021
Pages	: 514	Trim Size	: 7.00 x 9.50 x 1.00
Weight	: 844 Gms		

Print Book : ₹550.00 ₹495.00 10%Off

Blurb

This book contains collection of sorted questions asked in CSIR UGC NET Life Science exam during last nine years. The questions are followed by answers key. The questions asked in CSIR NET exam are of very good quality and quite useful for other examination like DBT JRF, IIT-JAM, SET, GATE etc. Answer of question are as officially published by on CSIR exam unit. Author feel that this compile questions will be quite useful for preparing targeted preparation for CSIR UGC NET exam or other related life science exams.

Table of Contents

Preface

Section – 1: Biochemistry

1. Structure of Atoms, Molecules, Bonds, Interactions
2. pH, buffer, Colligative properties, Molarity, Kinetics
3. Thermodynamics
4. Enzymes
5. Enzyme Inhibition
6. Carbohydrates, Lipids, Amino acid, Vitamins
7. Nucleotide and Nucleic acid (DNA/RNA)
8. Ramachandran Plot
9. Protein Folding– Secondary and Tertiary Structure
10. Proteins: Electrophoresis/Chromatography
11. Protein sequencing: Edman & Mass spectroscopy
12. Circular Dichroism spectroscopy
13. Carbohydrate Metabolism and TCA
14. Lipids, Amino acids and Nucleotide Metabolism
15. Red–Ox reaction, ETC and ATP synthesis

Section – 2: Cell Biology

1. Membrane Structure and Lipid Rafts
2. Applied Questions– Membrane Proteins, FRAP
3. Membrane Transport and potential
4. Protein Sorting
5. Cell wall and Cell Organelles
6. Cytoskeleton and its role in motility
7. Genome Organization
8. Transposons
9. Mitosis and meiosis cell
10. Cell Cycle and Regulation

11. Microbial Growth, Physiology and Stress

Section – 3: Molecular Biology

1. DNA Replication
2. DNA damage and repair mechanisms
3. Prokaryotic Transcription Process
4. Eukaryotic Transcription Process
5. 5' Capping and poly adenylation
6. RNA editing, splicing, trans-splicing and transport
7. Promoter Deletion Assay/EMSA
8. Transfer RNA and Amino-Acyl t-RNA
9. Translation Process
10. Genetic Code
11. Post-Translational Event
12. Translational Inhibitor
13. Regulation of gene expression in Phage/virus
14. Control of gene expression: LAC OPERON
15. Trp Operon
16. Control of gene expression in eukaryotes
17. mOR pathway and Translation regulation
18. Role of chromatin in gene expression
19. Gene silencing - RNA interference

Section – 4: Cell Communication Signaling and Immunology

1. Host parasite interaction
2. Cell Signaling
3. G Protein Coupled Receptor
4. Receptor Tyrosine Kinase and NF- κ B Signaling
5. Nuclear Receptor
6. Bacterial Signaling/chemotaxis
7. Applied Question-Signaling
8. Regulation of hematopoiesis
9. Cell-Cell and Cell-Matrix Interaction
10. Cell-Cell Signaling
11. Cancer
12. Apoptosis and Autophagy
13. Antigens and immunogenicity
14. Structure and Function of Antibody
15. Antibody diversity and monoclonal antibodies
16. MHC molecules, antigen presentation
17. Humoral and cell-mediated immune responses
18. The complement system and Toll like receptors
19. Hypersensitivity and autoimmunity
20. Mycobacterium tuberculosis and other bacteria
21. Plasmodium falciparum and Leishmania
22. Viral Infections
23. Vaccines

Section – 5: Developmental Biology

1. Determination, Fate, Morphogen
2. Gametogenesis and fertilization

3. Zygote formation, cleavage, blastula formation
4. Embryonic Stem cell and Potency
5. Gastrulation and formation of germ layers
6. Cell aggregation in Dictyostelium
7. Development in Sea Urchin
8. Axes and pattern formation in Drosophila
9. Axes and pattern formation amphibia and chick
10. Vulva formation in Caenorhabditis elegans
11. Eye lens induction
12. Limb development in vertebrates
13. Regeneration and Differentiation of neurons
14. Sex determination
15. Fertilization and development in Plants
16. Floral development in Arabidopsis

Section – 6: Plant Physiology

1. Photosynthesis - Light Reaction
2. CO₂ fixation-C₃, C₄ and CAM pathways.
3. Sucrose-Starch Synthesis
4. Photorespiration, Respiration, ETC, PPP
5. Microbial Nitrogen Fixation
6. Nitrate and ammonium assimilation
7. Plant hormones
8. Plant Hormone –Signaling
9. Phytochromes
10. Cryptochromes, phototropins, stomatal movement
11. Photoperiodism and biological clocks
12. Solute/Water transport
13. Phloem translocation
14. Secondary metabolites - Biosynthesis of terpenes
15. Phenols, Alkaloids and Glucosinolates
16. Responses of plants to abiotic stress
17. Responses of plants to biotic stress

Section – 7: Animal Physiology

1. Blood, plasma, groups and hemostasis
2. Cardiovascular System
3. ECG – its principle and significance
4. Respiratory system
5. Action potential, Nerve Impulse Transmission
6. Brain, Central and peripheral nervous system
7. Neural control of muscle tone and posture
8. Sense organs – Vision
9. Hearing and Tactile response.
10. Excretory system
11. Blood volume, electrolyte and, acid-base balance.
12. Stresss and Thermoregulation
13. Digestive system
14. Endocrinology
15. Reproduction and hormones

Section – 8: Genetics

1. Dominance, segregation, independent assortment
2. Multiple alleles
3. Complementation test and recon
4. Gene-Gene interactions
5. Genomic imprinting, dosage compensation, phenocopy, Sex linked characters
6. Recombination and Gene mapping methods: Linkage
7. Tetrad analysis
8. Molecular markers in genetics
9. Mapping by deletion and somatic cell hybrids
10. Extra chromosomal inheritance and Maternal effect
11. Microbial Transformation and Transduction
12. Mapping genes by interrupted mating
13. Pedigree analysis
14. Quantitative traits and heritability
15. Mutation : Types, causes and detection
16. Structural alterations of chromosomes
17. Numerical changes and Polyploidy
18. Homologous and Site Specific Recombination

Section – 9: Diversity in Life Forms

1. Principles of taxonomy and nomenclature
2. Classical & quantitative methods of taxonomy
3. Criteria used for classification in animals
4. Animal Larvae
5. Classification of plants
6. Classification of Bacteria
7. Fungus
8. Algae
9. Natural history of Indian subcontinent
10. Common parasites and pathogens

Section – 10: Ecology

1. Ecology, Habitat, Niche
2. Characteristics of a population
3. Population growth
4. Population regulation
5. Life history strategies (r and K selection)
6. Species Interactions and competition
7. Herbivory, Carnivory, Pollination, Symbiosis.
8. Community structure and attributes
9. Levels of species diversity and its measurement
10. Ecological Succession
11. Ecosystem structure and ecosystem function
12. Major terrestrial biome and Island biogeography
13. Environmental pollution
14. Biodiversity: Status
15. Conservation Biology

Section – 11: Evolution

1. Lamarck; Darwin–concepts
2. The evolutionary synthesis

3. Origin of Life
4. Paleontology and Evolutionary History
5. Molecular Evolution
6. Molecular tools in phylogeny
7. Population genetics
8. Microevolution
9. Random genetic drift
10. Convergent evolution/ Divergent evolution
11. Speciation: Allopatricity and Sympatricity
12. Sexual selection and Co-evolution
13. Brain, Behavior and Evolution
14. Group selection, Kin selection, Altruism
15. Biological rhythm
16. Social dominance, Use of space and territoriality
17. Parental investment and Reproductive success
18. Mimicry, Migration

Section – 12: Applied Biology

1. Microbial fermentation
2. Tissue and cell culture methods for plants
3. Transgenic plants
4. Agrobacterium Tumefaciens
5. Molecular approaches to transgene diagnosis
6. Animal Cell Culture and Transgenic Animals
7. Breeding in plants and animals
8. Bioremediation and phytoremediation
9. Biosensors

Section – 13: Methods in Biology

1. Molecular cloning and restriction digestion
2. Methods for analysis of gene expression
3. Isolation, separation and analysis of carbohydrate and lipid molecules
4. RFLP, RAPD and AFLP techniques/PCR
5. ELISA, RIA, western blot, FISH and GISH
6. UV/visible spectroscopy
7. NMR, ESR, SPR spectroscopy
8. Statistical Methods
9. Radiolabeling techniques
10. Microscopy and flow cytometer /FACS/FRET
11. Patch-clamp, EEG, PET, MRI, fMRI, CAT

This is computer generated document and does not require signature

Scientific Publishers

Date :- Thu Dec 02 2021