ZOOLOGY

Detailed Chapter-wise Analysis

1. Structural Organization In Animals

Topic	2020	2021	2022	2023	2024	2025	Total	Easy	Medium	Hard
Epithelial Tissue (Simple Epithelium)	1	0	1	1	0	0	3	1	2	0
Epithelial Tissue (Glandular Epithelium)	1	0	1	0	0	0	2	2	0	0
Epithelial Tissue (Cell-Cell Communication Junctions)	0	1	0	0	0	0	1	0	1	0
Connective Tissue (Loose Connective Tissue)	0	0	2	0	0	0	2	1	1	0
Connective Tissue (Dense Regular Connective Tissue)	0	0	1	1	0	0	2	0	2	0
Dense Connective Tissue (Irregular Dense Connective Tissue)	0	0	0	1	0	0	1	0	1	0
Connective Tissue (Specialised Connective Tissue)	0	0	0	1	0	0	1	1	0	0
Connective Tissue (Specialised - Blood)	0	0	0	1	0	0	1	0	1	0
Epithelial Tissue (Compound Epithelium)	0	0	0	0	1	0	1	0	0	1
Total	2	1	5	5	1	0	14	5	8	1

Summary: The "Structural Organization In Animals" chapter (excluding Cockroach and Frog topics) contributed a total of **14 questions**. Questions were primarily of **Medium difficulty (8 questions)**, with 5 Easy and 1 Hard question.

Insights:

- **Epithelial Tissue** (Simple, Glandular, Cell-cell communication junctions, Compound Epithelium) is a consistently tested area, mostly Easy to Medium difficulty.
- **Connective Tissue** (Loose, Dense Regular, Dense Irregular, Specialised Connective Tissue, Blood) is another important topic, often with Medium difficulty.
- This chapter focuses on the basic tissue types and their characteristics, excluding detailed organ or organism-specific anatomy (like Cockroach/Frog) which are covered in their dedicated chapter.

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2. Breathing And Exchange of Gases

Topic	2020	2021	2022	2023	2024	2025	Total	Easy	Medium	Hard
Transport of Gases (O2 & CO2)	1	0	0	0	1	0	2	2	0	0
Mechanism of Breathing (Inspiration & Muscles)	1	0	0	0	0	0	1	0	1	0
Disorders of Respiratory System	0	1	0	0	0	0	1	0	1	0
Exchange of Gases (pO2, pCO2, Alveoli, Blood/Tissue)	0	2	1	0	0	0	3	0	3	0
Human Respiratory System	0	0	1	0	0	0	1	0	1	0
Respiratory Volumes and Capacities (TV, IRV, ERV, etc.)	0	0	0	1	0	0	1	0	0	1
Respiratory Capacities (Vital Capacity)	0	0	0	0	1	0	1	0	1	0
Total	3	3	2	1	2	0	11	2	8	1

Summary: The "Breathing And Exchange of Gases" chapter had a total of **11 questions** over the six years. Questions were predominantly of **Medium difficulty (8 questions)**, with a couple of Easy (2 questions) and one Hard question.

Insights:

- **Transport of Gases** (O2 and CO2) is a fundamental and frequently tested concept, often appearing as Easy questions.
- **Exchange of Gases** (pO2 and pCO2 in alveoli, oxygenated/deoxygenated blood) is another key recurring topic, typically Medium difficulty.
- Human Respiratory System and its mechanism of breathing (e.g., inspiration muscles) are important.
- **Respiratory Volumes and Capacities** (e.g., Vital Capacity, TV, IRV) are periodically tested and can be Hard.
- Disorders of the Respiratory System are also examined.

3. Body Fluids And Circulation

Topic	2020	2021	2022	2023	2024	2025	Total	Easy	Medium	Hard
ECG (PQRST & Clinical Significance)	1	0	0	1	1	0	3	1	2	0
Blood - Formed Elements (Leucocytes & Disorders)	1	0	0	1	0	0	2	0	2	0
Coagulation of Blood	0	1	2	0	0	0	3	1	2	0
Blood Groups (ABO)	0	1	0	0	0	0	1	0	1	0
Circulatory Pathways	0	0	1	0	0	0	1	0	0	1
Blood Plasma	0	0	1	0	0	0	1	0	1	0
Cardiac Cycle	0	0	0	0	1	0	1	0	1	0
Regulation of Cardiac Activity	0	0	0	0	0	1	1	0	1	0
Total	2	2	5	2	2	1	14	2	10	1

Summary: The "Body Fluids And Circulation" chapter contributed a total of **14 questions** over the six years. Questions were primarily of **Medium difficulty (10 questions)**, with a few Easy (2 questions) and Hard (1 question).

Insights:

- **ECG (PQRST and Clinical Significance)** is a consistently tested topic, often with Easy to Medium difficulty.
- **Blood components**, including Formed Elements (Leucocytes and Disorders) and Blood Plasma, are important.
- **Coagulation of Blood** is a recurring theme, often with Medium difficulty.
- Blood Groups (ABO) and Circulatory Pathways are also examined.
- Cardiac Cycle and its regulation are periodically asked.

4. Excretory Products And Their Elimination

Topic	2020	2021	2022	2023	2024	2025	Total	Easy	Medium	Hard
Disorders of the Excretory System	1	0	0	0	0	0	1	1	0	0
Mechanism of Filtrate Concentration (Counter Current)	1	0	0	0	0	0	1	1	0	0
Regulation of Kidney Function (JGA, RAAS)	0	1	0	0	0	0	1	0	1	0
Osmoregulation (Introduction & Different Organisms)	0	0	1	1	0	0	2	0	2	0
Human Excretory System	0	0	0	1	1	0	2	0	1	1
Regulation of Kidney Function (Heart ANF)	0	0	0	1	0	0	1	0	1	0
Regulation of Kidney Function (ADH, RAAS, ANF)	0	0	0	1	0	0	1	1	0	0
Functions of the Tubules (PCT)	0	0	0	0	1	0	1	0	0	1
Functions of the Tubules (PCT, Henle's Loop, DCT)	0	0	0	0	0	1	1	0	1	0
Total	2	1	1	4	2	1	11	3	6	2

Summary: The "Excretory Products And Their Elimination" chapter has consistently appeared, with a total of **11 questions**. The difficulty is largely **Medium (6 questions)**, with some Easy (3 questions) and Hard (2 questions).

Insights:

- **Regulation of Kidney Function**, involving JGA, RAAS, ADH, and ANF, is a high-yield area, with questions often ranging from Easy to Hard.
- **Functions of the Tubules** (PCT, Henle's Loop, DCT) and the **Mechanism of Concentration of Filtrate** (Counter Current Mechanism) are consistently tested, often with Medium to Hard difficulty.
- Human Excretory System and Osmoregulation in different organisms are also important.
- Disorders of the Excretory System appear periodically.

5. Locomotion And Movement

Topic	2020	2021	2022	2023	2024	2025	Total	Easy	Medium	Hard
Skeletal System (Appendicular Skeleton)	1	1	0	0	0	0	2	1	1	0
Disorders of Muscular and Skeletal System	0	4	3	1	1	1	10	0	8	2
Types of Muscle (Smooth Muscle)	0	1	0	0	0	0	1	0	1	0
Skeletal System (Axial Skeleton)	0	1	0	0	0	0	1	0	1	0
Joints (Fibrous, Cartilaginous, Synovial)	0	0	1	1	1	0	3	0	2	1
Mechanism of Muscle Contraction (Sliding Filament Theory)	0	1	0	1	0	0	2	0	2	0
Types of Muscle (Cardiac Muscle)	0	0	0	0	1	0	1	0	1	0
Total	1	8	4	3	3	1	20	1	16	3

Summary: The "Locomotion And Movement" chapter is a significant area, contributing a total of **20 questions**. Questions are predominantly of **Medium difficulty (16 questions)**, with one Easy and three Hard questions.

Insights:

- **Disorders of Muscular and Skeletal System** are a major recurring topic, consistently appearing across years with Medium to Hard difficulty.
- **Joints** (Fibrous, Cartilaginous, Synovial) are frequently tested, often with Medium to Hard difficulty.
- **Mechanism of Muscle Contraction** (Sliding Filament Theory) is an important concept, typically Medium difficulty.
- Skeletal System (Axial and Appendicular Skeleton) and Types of Muscle (Smooth, Cardiac) are also consistently questioned.

6. Neural Control And Coordination

Topic	2020	2021	2022	2023	2024	2025	Total	Easy	Medium	Hard
Conduction of Nerve Impulse (Saltatory Conduction)	0	0	1	0	0	0	1	0	1	0
Parts of Brain (Forebrain)	0	0	0	1	0	0	1	0	1	0
Parts of Brain (Hindbrain)	0	0	0	0	2	0	2	0	1	1
Total	1	0	1	2	2	0	6	0	4	2

Summary: The "Neural Control And Coordination" chapter contributed a total of **6 questions** over the six years. Questions were primarily of **Medium difficulty (4 questions)**, with two Hard questions.

Insights:

- **Parts of the Brain** (Forebrain, Hindbrain) are consistently tested, often with Medium to Hard difficulty.
- Conduction of Nerve Impulse (Saltatory Conduction) is also examined.

7. Chemical Coordination & Integration

Topic	2020	2021	2022	2023	2024	2025	Total	Easy	Medium	Hard
Hormonal Disorders (Examples)	1	0	0	0	0	0	1	0	1	0
Adrenal Gland (Cortex Hormones)	1	0	0	0	0	0	1	1	0	0
Parathyroid Hormones & Function	0	0	1	0	0	0	1	0	1	0
Hormones (Current & Scientific Definition)	0	0	1	0	0	0	1	1	0	0
Thyroid Hormones & Function	0	0	0	1	1	0	2	0	1	1
Classification of Hormones (Protein & Steroid)	0	0	0	0	1	0	1	1	0	0
Adrenal Gland (Medulla Hormones)	0	0	0	0	0	1	1	0	0	1
Hormones of Gastrointestinal Tract	0	0	0	0	0	1	1	1	0	0
Hypothalamus (Location & Hormones)	0	0	0	0	0	1	1	1	0	0
Ovary Hormones & Function	0	0	0	0	0	1	1	1	0	0
Total	2	0	2	1	2	4	11	6	3	2

Summary: The "Chemical Coordination & Integration" chapter yielded a total of **11 questions** across the years, showing a consistent presence. Questions were mostly **Easy (6 questions)**, with some Medium (3 questions) and Hard (2 questions).

Insights:

- **Hormonal glands and their functions**, particularly Adrenal Gland (Cortex and Medulla), Thyroid, and Parathyroid hormones, are consistently important and can range from Easy to Difficult.
- Classification of hormones (Protein, Steroid) and the general definition of hormones are also tested.
- Hypothalamus and hormones of the Gastrointestinal Tract and Ovary have also appeared.
- Hormonal Disorders are periodically questioned.

8. Animal Kingdom

Topic	2020	2021	2022	2023	2024	2025	Total	Easy	Medium	Hard
Non-Chordate Classification (Coelenterata/Cnidaria)	1	1	0	0	0	0	2	1	1	0
Basis of Classification (Notochord)	1	0	0	0	0	0	1	1	0	0
Chordate Classification (Pisces - Chondrichthyes)	1	0	0	0	0	0	1	0	1	0
Non-Chordate Classification (Porifera)	0	1	0	0	0	0	1	1	0	0
Non-Chordate Classification (Ctenophora)	0	2	0	0	0	0	2	1	1	0
Non-Chordate Classification (Annelida)	0	1	0	0	0	0	1	1	0	0
Chordate Classification (Class Aves)	0	1	1	0	0	0	2	0	1	1
Non-Chordate Classification (Mollusca)	0	1	0	0	0	0	1	1	0	0
Non-Chordate Classification (Arthropoda)	0	1	0	0	0	0	1	0	1	0
Non-Chordate Classification (Aschelminthes/Nematoda)	0	2	0	0	1	0	3	2	1	0
Non-Chordate Classification (Platyhelminthes)	0	1	0	0	0	0	1	0	1	0
Non-Chordate Classification (Echinodermata)	0	1	0	0	0	1	2	0	2	0
Introduction (General Description)	0	0	1	0	0	0	1	1	0	0
Chordata and Non-Chordata (Differences/Examples)	0	0	1	1	1	0	3	0	2	1
Non-Chordate Classification (Hemichordata)	0	0	0	1	0	0	1	0	1	0
Chordate Classification (Class Mammalia)	0	0	0	1	0	0	1	0	1	0
Chordata - Vertebrata (Pisces: Chondrichthyes & Osteichthyes)	0	0	0	0	2	0	2	0	1	1

Broad Classification (Coelom)	0	0	0	0	0	1	1	0	0	1
Chordata - Vertebrata (Class Cyclostomata)	0	0	0	0	0	1	1	1	0	0
Phylum Chordata (Basic Features)	0	0	0	0	0	1	1	0	1	0
Total	3	12	3	3	4	4	29	9	15	5

Summary: The "Animal Kingdom" chapter is a significant contributor to NEET questions, with a total of **29 questions** asked across the six years. Questions are largely focused on **Medium difficulty (15 questions)**, though there is a healthy mix of Easy (9 questions) and Hard (5 questions) questions.

Insights:

- **Classification of animals, both chordates and non-chordates**, particularly their characteristic features and examples, is a consistently tested area.
- Topics like **Coelenterata/Cnidaria, Aschelminthes/Nematoda, Ctenophora, and Echinodermata** appear multiple times, spanning Easy to Medium difficulty.
- **Chordate classification**, including Pisces (Chondrichthyes and Osteichthyes) and Class Aves/Mammalia, is also important and can include Hard questions.
- General concepts like **Basis of Classification** (e.g., Notochord) and Broad Classification of Kingdom Animalia (e.g., Coelom) are also tested.

9. Biomolecules

Topic	2020	2021	2022	2023	2024	2025	Total	Easy	Medium	Hard
Enzymes (Classification & Nomenclature)	1	0	0	0	1	1	3	1	2	0
Nature of Bonds Linking Monomers (Glycosidic, Peptide, etc.)	1	2	0	0	0	0	3	1	2	0
Primary and Secondary Metabolites (Examples & Function)	1	2	0	0	0	0	3	0	1	2
Nucleic Acids (DNA)	1	0	1	0	0	1	3	1	2	0
Amino Acids (Types)	1	0	0	0	0	0	1	1	0	0
Proteins (Function)	1	0	0	0	1	0	2	0	2	0
Lipids (Glycerol & Fatty Acid)	0	1	0	0	0	0	1	0	0	1
Carbohydrates (Cell Wall Composition)	0	0	1	0	0	0	1	0	1	0
Lipids (Phospholipid, Triglycerides, Steroids, etc.)	0	0	1	0	1	0	2	1	1	0
Carbohydrates (Disaccharides)	0	0	1	0	0	0	1	0	1	0
Carbohydrates (Polysaccharides)	0	0	1	1	0	0	2	0	2	0
Enzymes (Inhibition)	0	0	0	1	0	0	1	0	0	1
Proteins (Structure)	0	1	0	1	0	0	2	0	1	1
Enzymes (Competitive/Non-Competitive Inhibition)	0	0	0	0	1	0	1	1	0	0
Enzymes (Co-factors)	0	0	0	0	1	2	3	2	0	0

Enzymes (Mechanism of Action)	0	0	0	1	1	0	2	0	1	1
Analysis of Chemical Composition (DNA)	0	0	0	0	0	1	1	0	1	0
Total	6	7	5	4	6	5	32	8	15	9

Summary: The "Biomolecules" chapter contributed a total of **32 questions** across the six years, indicating its consistent importance. Questions show a diverse difficulty distribution, with **15 Medium questions, 9 Hard questions, and 8 Easy questions**.

Insights:

- **Enzymes**, including their classification, nomenclature, mechanism of action, inhibition, and co-factors, are frequently questioned, with a mix of Easy, Medium, and Hard difficulty.
- The **nature of bonds linking monomers** in polymers (Glycosidic, Peptide, etc.) and the structure/function of proteins are important and often appear as Medium difficulty questions.
- **Lipids and Carbohydrates**, covering their types, composition, and functions, are consistently tested, often with Medium to Hard questions.
- **Nucleic Acids**, specifically DNA, also feature in the questions, including analysis of chemical composition.

10.Human Reproduction

Topic	2020	2021	2022	2023	2024	2025	Total	Easy	Medium	Hard
Gametogenesis (Oogenesis)	2	0	1	0	0	0	3	1	1	1
Placenta (Hormones)	1	0	0	0	0	0	1	0	1	0
Fertilisation (Mechanism & Significance)	0	1	0	0	0	0	1	0	1	0
Parturition (Foetal Ejection Reflex)	0	1	0	0	0	0	1	0	1	0
Pregnancy/Gestation (Period/Trimesters)	0	1	0	0	0	0	1	0	1	0
Gametogenesis (Spermatogenesis & Oogenesis)	0	0	1	0	0	0	1	0	0	1
Gametogenesis (Spermatogenesis)	0	0	1	0	0	0	1	0	0	1
Male Reproductive System (Parts & Accessory Glands)	0	0	0	1	0	0	1	0	1	0
Female Reproductive System (Parts & Accessory Glands)	0	0	0	1	1	0	2	1	1	0
Embryonic Development (Morula, Blastula, Gastrulation)	0	0	0	1	0	0	1	0	1	0
Menstrual Cycle	0	0	0	2	0	2	4	1	1	2
Female Reproductive System (External Genitalia)	0	0	0	0	1	0	1	0	1	0
Gametogenesis (Hormonal Control of Spermatogenesis and Oogenesis)	0	0	0	0	2	0	2	0	0	2
Lactation	0	0	0	0	1	0	1	0	1	0

Gametogenesis (Structure of Sperm)	0	0	0	0	0	1	1	0	1	0
Embryonic Development (Organ Development in Foetus)	0	0	0	0	0	1	1	0	1	0
Cleavage (Types)	0	0	0	0	0	1	1	0	1	0
Total	3	3	3	5	5	5	24	3	13	7

Summary: The "Human Reproduction" chapter is a highly significant area, contributing a total of **24 questions** across the six years. Questions are diverse in difficulty, with **13 Medium, 7 Hard, and 3 Easy questions**.

Insights:

- **Gametogenesis** (Oogenesis, Spermatogenesis, Hormonal Control, Structure of Sperm) is a highly significant and frequently tested area, often including Hard questions.
- **Menstrual Cycle** (Menarche, events, menopause) is consistently asked, ranging from Easy to Difficult.
- The Male and Female Reproductive Systems (parts, accessory glands, external genitalia) are important.
- **Embryonic Development** (Morula, Blastula, Gastrulation, organ development, cleavage) and Fertilisation are recurring topics, often with Medium difficulty.
- Placenta hormones, Parturition, Pregnancy, and Lactation also appear periodically.

11.Reproductive Health

Topic	2020	2021	2022	2023	2024	2025	Total	Easy	Medium	Hard
Assisted Reproductive Technologies (ART, IVF, etc.)	1	0	0	0	0	1	2	1	0	1
Sexually Transmitted Diseases (STDs)	0	1	0	0	0	0	1	1	0	0
Birth Control (Barrier Methods)	0	1	1	1	1	0	4	2	2	0
Birth Control (IUDS)	0	2	2	1	1	0	6	1	5	0
Birth Control (Sterilisation Procedure)	0	1	0	1	0	0	2	0	2	0
Birth Control (Natural Methods)	0	0	1	1	0	0	2	0	2	0
Birth Control (Oral Contraceptive)	0	0	1	1	0	0	2	1	1	0
Reproductive Health (Problems & Strategies)	0	0	0	1	0	0	1	0	1	0
Total	1	5	5	6	2	1	20	6	13	1

Summary: The "Reproductive Health" chapter has been consistently tested, contributing a total of **20 questions**. The majority of questions are of **Medium difficulty (13 questions)**, with 6 Easy and 1 Hard question.

Insights:

- **Birth Control methods** (Barrier, IUDS, Sterilisation, Natural, Oral Contraceptive) are frequently tested, appearing consistently across years with Easy to Medium difficulty.
- **Assisted Reproductive Technologies** (ART, IVF, etc.) are recurring topics, with a mix of Easy and Difficult questions.
- Sexually Transmitted Diseases (STDs) are also important.
- Reproductive Health - Problems and Strategies, including family planning and awareness, appear periodically.

12.Human Health And Diseases

Topic	2020	2021	2022	2023	2024	2025	Total	Easy	Medium	Hard
Common Diseases in Humans (Typhoid, Pneumonia, etc.)	1	1	0	0	2	0	4	0	4	0
Common Diseases in Humans (Life Cycle of Plasmodium)	1	0	0	0	0	0	1	1	0	0
Immunity (Active & Passive)	1	0	0	0	0	0	1	1	0	0
Common Diseases in Humans (Disease Causing Organisms)	0	1	0	1	0	0	2	1	1	0
Drugs (Different Types)	0	0	1	0	0	0	1	0	0	1
Immunity (Acquired)	0	0	1	0	0	0	1	0	0	1
AIDS (HIV Virus, Transmission, Symptoms)	0	0	0	2	0	0	2	0	2	0
Drugs (Opioids, Cannabinoids, Cocaine, etc.)	0	0	0	1	1	0	2	0	2	0
Lymphoid Organs (Secondary)	0	0	0	0	1	1	2	0	2	0
Cancer (Introduction)	0	0	0	0	0	1	1	0	0	1
Immunity (Structure of Antibody)	0	0	0	0	0	1	1	1	0	0
Immunity (Innate)	0	0	0	0	0	1	1	1	0	0
Total	3	2	2	5	4	4	20	5	12	3

Summary: The "Human Health And Diseases" chapter consistently features in NEET exams, contributing a total of **20 questions**. Questions are predominantly of **Medium difficulty (12 questions)**, with a fair share of Easy (5 questions) and Hard (3 questions).

Insights:

- **Common Diseases in Humans**, including specific diseases (Typhoid, Pneumonia, Amoebiasis, etc.) and disease-causing organisms, are frequently tested, spanning Easy to Medium difficulty.
- **Immunity**, covering Active/Passive, Acquired, Innate Immunity, and Antibody Structure, is a critical area, often with Hard questions.

- **AIDS** (HIV Virus, transmission, replication, symptoms) is a consistently important topic, typically Medium difficulty.
- **Drugs** (Opioids, Cannabinoids, Cocaine, etc.) and their effects are periodically questioned, sometimes with Hard difficulty.
- Lymphoid Organs (Secondary) and Cancer (Introduction) have also appeared.

13.Biotechnology: Principles And Processes

Topic	2020	2021	2022	2023	2024	2025	Total	Easy	Medium	Hard
Gel Electrophoresis (DNA Fragments)	1	1	1	1	0	1	5	2	2	1
Restriction Enzymes (Types, Nomenclature, Ends)	2	0	0	0	1	0	3	2	1	0
Tools of Recombinant DNA Technology (Restriction Enzymes & Others)	1	1	1	0	0	0	3	1	2	0
Cloning Vectors (Plasmid pBR322)	1	0	1	0	1	0	3	0	1	2
Polymerase Chain Reaction (PCR Process & Applications)	0	3	1	0	0	1	5	1	3	1
Process of Recombinant DNA Technologies (Isolation of Genetic Material)	0	1	0	2	0	0	3	1	1	1
Identification of Clones (Antibiotic Resistance)	0	1	1	0	0	0	2	0	1	1
Principles of Biotechnology (Introduction)	0	0	1	1	0	0	2	1	1	0
Identification of Clones (Blue White Screening)	0	0	1	0	0	1	2	1	1	0
Methods of Gene Transfer (Gene Gun, Electroporation, etc.)	0	0	0	1	0	0	1	0	1	0
Cloning Vectors (Pbr322, Cosmids, etc.)	0	0	0	1	0	1	2	1	0	1
Process of Recombinant DNA	0	0	0	0	1	0	1	0	0	1

Technologies (Insertion into Host Cell)										
Obtaining Foreign Gene Product (Bioreactors)	0	0	0	0	1	1	2	2	0	0
Cloning Vectors (Ti Plasmid, Retrovirus for Plants/Animals)	0	0	0	0	1	0	1	1	0	0
Processes of Recombinant DNA Technologies (Gene Amplification using PCR)	0	0	0	0	0	1	1	0	1	0
Total	5	7	7	6	6	6	37	13	15	9

Summary: This chapter is a high-yield area, accounting for a total of **37 questions** over the six years. The difficulty is varied, with **15 Medium questions, 13 Easy questions, and 9 Hard questions**.

Insights:

- **Tools of Recombinant DNA Technology**, especially Restriction Enzymes (types, nomenclature, sticky/non-sticky ends), are repeatedly asked and can be Easy to Medium.
- **Gel Electrophoresis** for DNA fragment separation and isolation is a recurring topic, with questions ranging from Easy to Hard.
- **Polymerase Chain Reaction (PCR)**, including its steps (denaturation, annealing, extension), Taq Polymerase, importance, and applications, is a high-yield topic, appearing with Medium to Hard difficulty.
- **Cloning Vectors** (e.g., Plasmid (pBR322), Cosmids, Ti Plasmid) and methods of gene transfer are also critical, sometimes with Hard difficulty.
- The process of Recombinant DNA Technologies, such as isolation of genetic material and insertion into host cells, is tested periodically.
- Identification of clones, including antibiotic resistance and blue-white screening methods, are important concepts.

14.Biotechnology And Its Applications

Topic	2020	2021	2022	2023	2024	2025	Total	Easy	Medium	Hard
Applications in Medicine (Recombinant Insulin - Humulin)	1	1	1	0	0	2	5	3	2	0
Applications in Agriculture (Bt Cotton)	1	0	0	0	1	0	2	1	1	0
Applications in Agriculture (RNA Interference)	1	2	1	0	0	2	6	2	3	1
Applications in Medicine (Gene Therapy)	0	2	1	0	1	0	4	1	2	1
Applications in Agriculture (Introduction)	0	0	0	0	2	0	2	2	0	0
Applications in Agriculture (Green Revolution)	0	1	0	0	0	0	1	0	1	0
Applications in Medicine (Molecular Diagnosis)	0	2	1	1	0	0	4	0	3	1
Applications in Medicine (Treatment of Cancer)	0	0	0	0	0	1	1	0	1	0
Total	3	8	4	1	4	5	25	9	13	3

Summary: The "Biotechnology And Its Applications" chapter contributed a total of **25 questions**, showing its consistent importance in NEET exams. Questions are predominantly of **Medium difficulty (13 questions)**, with a good number of Easy (9 questions) and some Hard (3 questions).

Insights:

- **Biotechnological Applications in Medicine**, particularly Recombinant Insulin (Humulin) and Gene Therapy, are frequently tested, spanning Easy to Medium difficulty.
- **Applications in Agriculture**, such as Bt Cotton and RNA Interference, are also consistently important, often with Medium difficulty.
- Molecular Diagnosis is a recurring topic with a mix of difficulty.
- General introductions to biotechnological applications and the concept of Green Revolution appear periodically.

15.Evolution

Topic	2020	2021	2022	2023	2024	2025	Total	Easy	Medium	Hard
Origin of Life (Oparin-Haldane Theory)	1	0	0	0	0	0	1	1	0	0
Evidences for Evolution (Embryological)	1	0	0	0	0	0	1	1	0	0
Mechanism of Evolution (Variation, Mutation, Recombination)	1	0	0	0	0	0	1	0	1	0
Convergent and Divergent Evolution	1	2	1	1	1	0	6	4	2	0
Hardy-Weinberg Principle	0	1	0	0	1	0	2	1	1	0
Evidences for Evolution (Biogeographical)	0	1	0	0	0	0	1	0	1	0
Adaptive Radiation (Convergence & Divergence)	0	1	1	1	0	0	3	0	3	0
Natural Selection (Types)	0	0	1	0	0	0	1	0	0	1
Origin and Evolution of Man	0	0	0	0	1	0	1	0	1	0
Brief Account of Evolution (Animal Forms)	0	0	0	0	1	0	1	0	0	1
Evidences for Evolution (Morphological)	0	0	0	0	0	1	1	1	0	0
Total	4	5	3	2	4	1	19	8	9	2

Summary: The "Evolution" chapter is a moderate contributor, with a total of **19 questions** across the six years. Questions are largely balanced between **Easy (8 questions) and Medium (9 questions)**, with a couple of Hard questions (2 questions).

Insights:

- **Evidences for Evolution** (Embryological, Biogeographical, Morphological) are frequently tested, spanning Easy to Medium difficulty.

- Concepts like **Convergent and Divergent Evolution and Adaptive Radiation** are consistently important, often appearing as Medium questions.
- **Hardy-Weinberg Principle and Natural Selection** are also recurring topics, with a mix of Easy and Hard questions.
- Theories of Origin of Life (Oparin-Haldane) and the Origin and Evolution of Man are periodically examined.
- A Brief Account of Evolution, specifically animal forms through geological periods, can be a Hard question.