Biology Portions for First Term Examination – Jan, 2023

Year 9 – Year 13

Year 9

Topic 1 – Key Biological Concepts

1. Microscopes

2. Plant & animal cells.

3. Using Microscopes.

Core practical – Using Microscopes

4. Specialized cells

5. Inside bacteria

6. Enzymes & Nutrition.

7. Testing foods.

Core practical – Testing Foods

8. Enzyme action.

9. Enzyme activity.

10. pH & enzymes.

Core practical – pH & enzymes

11. Transporting substances .

12. Osmosis in potato slices.

Core practical – Osmosis in potato slices

Topic 8 – Exchange & transport in animals

1. Efficient transport and exchange

2. Factors affecting diffusion

Year 10

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1. Microscopes.

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Core practical – osmosis in potato slices

Topic 2– Cells and Control

1. Mitosis.

2. Growth in animals.

3. Growth in plants.

4. Stem cells.

5. The brain.

6. Brain& spinal cord problems.

7. The nervous system.

8. The eye.

9. Neurotransmissions speeds.

Topic 3 – Genetics

1. Sexual and asexual reproduction.

2. Meiosis.

3. DNA.

4. DNA extraction.

5. Protein synthesis.

6. Genetic variants & phenotypes.

7. Mendel.

8. Alleles.

9. Inheritance.

10. Multiple and missing alleles.

11. Gene mutations.

12. Variation

Topic 4– Natural selection and Genetic modification

1. Evidence for human evolution.
2. Darwin's theory.
3. Development of Darwin's theory.
4. Classification.

Topic 8 – Exchange & transport in animals

1. Efficient transport and exchange

2. Factors affecting diffusion

Year 11

Paper 1

Topic 1– Key Biological Concepts

1. Microscopes.

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Core practical – Using Microscopes

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Core practical – Testing Foods

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Topic 2 – Cells and Control

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Topic 3– Genetics

1. Sexual and asexual reproduction.

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6. Genetic variants & phenotypes.

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8. Alleles.

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10. Multiple and missing alleles.

11. Gene mutations.

12. Variation.

Topic 4– Natural selection and Genetic modification

1. Evidence for human evolution.

2. Darwin's theory.

3. Development of Darwin's theory.

4. Classification.

5. Breeds and varieties.

6. Tissue Culture.

7. Genes in agriculture and medicine.

8. Fertilisers and biological control.

Paper 2

Topic 5 – Health, Disease and the Development of medicines

1. Health and Disease.

2. Non-communicable diseases.

3. Cardiovascular diseases.

4. Pathogens.

5. Spreading pathogens.

6. Virus life cycles

7. Plant defences.

8. Plant diseases.

9. Physical and chemical barriers.

10. The immune response

11. Antibiotics.

12. *Core practical – Antibiotics*

13. Monoclonal antibodies

Topic 6 – Plant Structures and their functions

1. Photosynthesis.

2. Factors that affect photosynthesis

3. Photosynthesis & light intensity

Core practical – Light intensity & Photosynthesis

4. Absorbing water & mineral ions

5. Transpiration & translocation.

6. Plant adaptations.

7. Plant hormones

8. Uses of plant hormones

Topic 7– Animal Coordination , Control and Homeostasis

1. Hormones.

2. Hormonal control of metabolic rate.

3. The menstrual cycle

4. Hormones & the menstrual cycle

5. Control of blood glucose.

6. Type 2 diabetes.

7. Thermoregulation.

8. Osmoregulation.

9. The kidneys.

Topic 8 – Exchange & transport in animals

1. Efficient transport and exchange

2. Factors affecting diffusion

3. The circulatory System

4. The Heart

Year 12

Biology B – Book 1

Topic 1- Biological molecules

1.1 Chemistry for life.

1.2 Biological molecules 1

1.3 Biological molecules 2

1.4 Enzymes

Topic 2- Cells and viruses

2.1 Prokaryotic cells.

2.2 Eukaryotic cells.

2.3 Eukaryotic cell division

Topic 4 – Exchange and transport

4.1- Cell transport mechanisms

Year 13

Paper 1 - Biology B - Book 1

Topic 1- Biological molecules

1.1 Chemistry for life.

1.2 Biological molecules 1

1.3 Biological molecules 2

1.4 Enzymes.

Topic 2- Cells and viruses

2.1- Prokaryotic cells.

2.2- Eukaryotic cells.

2.3 -Eukaryotic cell division

2.4 -Meiosis and sexual reproduction.

Topic 3- Classification

3.1- Classification

3.2- Natural selection

3.3-Biodiversity

Topic 4 – Exchange and transport

4.1- Cell transport mechanisms

4.2- Gas exchange

4.3- Circulation

4.4- Transport in plants

Paper 2 - Biology B - Book 2

Topic 5- Energy for life processes

5.1- Cellular Respiration

5.2-Photosynthesis

Topic 6- Microbiology and pathogens

6.1- Bacteria and disease

6.2.-Non bacterial pathogens

6.3- The response to infection

Topic 7 – Modern genetics

7.1 -Using gene sequencing

7.2 -Factors affecting gene expression

7.3 -Gene technology

Topic 8- Origins of genetic variation

8.1-Genetic information

8.2- Gene pools

Topic 10 – Ecosystems

10.1 – The nature of ecosystems
