Grade 11 June exam 2025

Marks 150

Duration 2hrs30mins

Compiled by A Ngubane

Topic	Breakdown of topic	Investigations	Possible drawings	DBE textbook activities
Biodiversity and classification of microorganisms **28 Marks**	Micro- organisms: basic structure and general characteristics of the following groups: viruses bacteria Protista fungi The roles that these groups play in maintaining balance in the environment and web of life Symbiotic relationships of bacteria such as nitrogen fixing bacteria in plants and E. coli in the human intestine The effect and management of one disease from each of the four groups: - viruses (rabies, HIV/AIDS, influenza) - bacteria (blight, cholera, tuberculosis, anthrax)	Growing cultures on agar plates, or bread mould (fungus) on bread.	Rhizopus stolonifer Bacteria Virus	Activity 1 page 16 Activity 2 page 16-17 End of topic exercise page 43-48

	- protists (malaria) - fungi (rust, thrush, ringworm, athlete's foot) Immunity, including plants and animals' immune responses against the infecting micro-organisms. The use of drugs e.g., antibiotics; effect on micro-organisms Vaccinations (discuss briefly) The use of micro-organisms to produce medicines (e.g., insulin and antibiotics) Traditional technology to produce, e.g., beer, wine and cheese.			
Biodiversity of plants **28 Marks**	Grouping of Bryophytes and Pteridophytes Grouping of Gymnosperms and Angiosperms Use simple diagrams to identify an example of each group and a comparative table to demonstrate the presence/absence		Prothallus Pertunia/ flower	Activity 1 page 66-67 End of topic exercise page 71-76

	of following in the four groups: -vascular tissue (xylem and phloem) -true leaves and roots -seeds or spores fruit. -decreasing dependence on water for reproduction from Bryophytes to Angiosperm <u>Asexual and sexual reproduction,</u> name advantages and disadvantages of each. <u>Flowers as reproductive structures</u> Adaptations for pollination through (different pollinators) wind, insects and birds (South African examples only) differences and similarities.			
Biodiversity of animals **28 Marks**	<u>The concept of a phylum.</u> Relationship between body plan and grouping of animals in phyla. <u>Six animal Phyla:</u> - Porifera, - Cnidaria,		Triplo-blastic or Diplo-blastic diagram	Activity 1 page 82 Activity 2 page 85-86 Activity 3 page 91-92

	- Platyhelminthes, - Annelida, - Arthropoda - Chordata Use simple diagrams to identify an example of each phylum and a comparative table to demonstrate the following in the six phyla: Key features in respect of body plans: - symmetry and cephalisation - the number of tissue layers developed from embryo - the number of openings in the gut - coelom and blood systems. The role of invertebrates in agriculture and ecosystems			End of topic exercise page 98-103
Photosynthesis **28 Marks**	Basic cell structure with focus on the chloroplast and leave structure Photosynthesis – process the intake of raw materials, trapping and storing of energy, formation of food in chloroplasts and its storage.	investigation to explain the principles of the Scientific process. Light is necessary for photosynthesis Chlorophyll is needed for photosynthesis	choloplast	Activity 1 page 111 Activity 2 Page 123-125 End of topic exercise page 126-132

	The release of oxygen Mention only of light and dark phase Importance of photosynthesis: release of oxygen, uptake of carbon dioxide from atmosphere, food production Effects of variable amounts of light, carbon dioxide and temperature on the rate of photosynthesis Description Improve crop yields in greenhouse systems, role of ATP as energy-carrier in the cell	Oxygen is produced during photosynthesis How to do starch test		
Cellular respiration **19 marks**	The process of respiration and uses of energy for living cells Aerobic respiration in cytoplasm and mitochondria, glycolysis, Krebs cycle and oxidative phosphorylation Anaerobic respiration production of	TWO investigations to explain the principles of the Scientific process: O2 is required by respiration, CO2 is produced by living organisms during respiration	Mitoch-ondria	End of topic exercise page 174-177

	lactic acid in muscles during exercise anaerobic respiration The role of anaerobic respiration in the industry e.g. beer brewing and bread making. A comparison between aerobic respiration and anaerobic respiration in terms of raw materials required products and relative amounts of energy released			
Animal nutrition **19 Marks**	The differences in dentition for herbivorous, carnivorous and omnivorous lifestyles in terms of nutritional requirements and energy relationships (link with ecology – food chains) Human nutrition The macro-structure of the alimentary canal and associated organs and the functions of the different parts		Villus	Activity 1 page 136 Activity 2 page 140-141 Activity 3 page 147 End of topic exercise page 158

Investigative skills required

Skill	Key point
Drawing a: **Line graph** **Bar graph** **Histogram** **Pie chart**	• The caption must have two variables • Scale: Equal spaces between units on axes which are in chronological order • Equal width of the bars and between bars • Pie graph must show calculations and a compass & protractor must be used
Drawing a: **Table Diagram with labels**	• Table must be drawn with clear columns and related items must be compared • Drawing must be in pencil with a definite heading/caption and label lines must point to the exact part and the labels written in pen
Answering: **Scientific investigative questions**	• Use the aim of the investigation to determine the dependent and independent variables which is not always the same as the labels on a graph or table • Reliability – repeat the investigation and increase the sample size must be linked to the investigation • Validity – keep the variables constant e.g., same age, gender, environmental conditions etc. the word same must be included • Control – to compare results and ensure that the results are due to the factor that is tested • Difference between the experiment and the control. With the control you eliminate the factor that you test. With the experiment you provide the factor you test
Do calculations	Simple calculations • Percentage • Average • Percentage increase or decrease formula Convert calculations to a description

Tips from A Ngubane

• Use reading time to plan how you will answer each question and manage your time wisely.

• Read the instructions of the question paper and follow them.

• Do not create a cover page, start answering from the first page of your answer book.

Exam tips

• All diagrams for each topic must be studied

- Topic 1 diagrams of virus, fungi, bacteria and protist
- Topic 2 diagrams of each plant group as well as phylogenetic tree/clasp gram. Practice how to answer questions
- Topic 3 diagrams of each phyla
- Topic 4 diagram of chloroplast, diagram of light phase and dark phase
- Topic 4 diagram of mitochondria, diagram of aerobic and anaerobic respiration
- Topic 5 diagram of skulls showing dentition, diagram of digestive system

• All activities given in the classroom must be studied

• Practice terminologies

• practice all topic tests

• show calculations even when not asked to

Use the link for past papers