

- 2.2 Study the diagram of four plant species below and answer the questions that follow.



- 2.2.1 What is this type of representation called? (1)
- 2.2.2 Which characteristic is found in the protea that is not found in the pine tree? (2)
- 2.2.3 During which period did the ancestor of the protea and the pine tree diverge (branched off)? (1)
- (4)

- 2.3 Study the sketches of plants below and answer the questions that follow.



- 2.3.1 Identify the plant groups under which plants A, B, C and D are classified. (4)
- 2.3.2 Identify the structure numbered 2. (1)
- 2.3.3 Plants B and C both produce seeds. Explain the importance of seeds for both these plants. (4)
- 2.3.4 Give a reason why plant A needs water for sexual reproduction. (2)
- (11)

- 2.4 Use your knowledge and compare the jelly fish, tapeworm and earthworm in a table regarding the following characteristics.
- 2.4.1 symmetry
- 2.4.2 coelom
- 2.4.3 blood system
- (10)

### QUESTION 3

- 3.1 Read the passage below and answer the questions that follow.

Peat lands are special wetlands that play a very important role in ecology. A peat land, of approximately 6 000 years old, near Mafeking is almost destroyed because of excessive extraction of water from the nearby Molopo river. The water is extracted for human consumption.

Peat lands like the one near Mafeking is exceptional and play an important role in storing water as well as preventing climate changes.

Dr Phil-Louis Grundling said that carbon that is 'held' or 'stored' by peat lands combats climate change because it decreases the amount of carbon in the atmosphere.

Peat lands trap about one third of the world's carbon. Approximately 50% of wetlands worldwide are peat lands. However in South Africa about 10% of the wetlands are peat lands.

Grundling explained that peat lands can hold about 1 000 times its own mass in water. This replenishes the water table and is the source that keeps streams flowing. The "sponge effect" of the peat also makes it possible to store water that is then released during dry seasons.

Dr Grundling said that it might be too late to restore the peat land near Mafeking but it might be possible to restore some parts of it if more water is supplied to this peat land.

The result of this destruction is depletion of the water table. The habitat of numerous fish and frog species that lived in this peat land was also destroyed.

From: *Beeld*, 24 September 2016.

- 3.1.1 Give TWO other reasons (not mentioned in the passage) that can lead to the destruction of wetlands. (2)
- 3.1.2 Discuss reasons from the passage regarding the importance of these specific wetlands for the environment. (4)
- 3.1.3 Suggest a way in which this peat land near Mafeking can be restored. (2)
- (8)

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## **Memorandum For Life Sciences Grade 11 November 2014:**

**Teach** Janice Koch, 2019-01-02 Teach is a concise introduction to education that challenges students preconceived notions of teaching in order to transform them into reflective practitioners Empathizing with the difficulties students face as they move from the college classroom to their own classrooms revered author Janice Koch invites readers to both reflect on their own dispositions for teaching and look outside of themselves to the demands of the profession making the philosophy of teaching and learning accessible and relevant The Fourth Edition emphasizes the changing student population and the role of technology and globalization in the field while also including the Interstate Teacher Assessment and Support Consortium InTASC standards correlating with each chapter's content With the guidance of this supportive text students will gain vital exposure by engaging with professional standards from the very start of their career **Gunnar Myrdal and America's Conscience** Walter A. Jackson, 2014-07-02 Gunnar Myrdal's An American Dilemma 1944 influenced the attitudes of a generation of Americans on the race issue and established Myrdal as a major critic of American politics and culture Walter Jackson explores how the Swedish Social Democratic scholar policymaker and activist came to shape a consensus on one of America's most explosive public issues **Breaking Point** Rebecca Schwartz Greene, 2023-01-03 WINNER SOCIETY FOR MILITARY HISTORY DISTINGUISHED BOOK AWARDS FIRST BOOK This book informs the public for the first time about the impact of American psychiatry on soldiers during World War II Breaking Point is the first in depth history of American psychiatry in World War II Drawn from unpublished primary documents oral histories and the author's personal interviews and correspondence over years with key psychiatric and military policymakers it begins with Franklin Roosevelt's endorsement of a universal Selective Service psychiatric examination followed by Army and Navy pre and post induction examinations Ultimately 2.5 million men and women were rejected or discharged from military service on neuropsychiatric grounds Never before or since has the United States engaged in such a program In designing Selective Service Medical Circular No 1 psychiatrist Harry Stack Sullivan assumed psychiatrists could predict who might break down or falter in military service or even in civilian life thereafter While many American and European psychiatrists questioned this belief and huge numbers of American psychiatric casualties soon raised questions about screening's validity psychiatric and military leaders persisted in 1942 and 1943 in endorsing ever tougher screening and little else Soon families complained of fathers and teens being drafted instead of being identified as psychiatric 4Fs and Blacks and Native Americans among others complained of bias A frustrated General George S. Patton famously slapped two malingering neuropsychiatric patients in Sicily a sentiment shared by Marshall and Eisenhower though they favored a tamer style Yet psychiatric rejections, evacuations and discharges mounted While psychiatrist Roy Grinker and a few others treated soldiers close to the front in Tunisia in early 1943 this was the exception But as demand for manpower soared and psychiatrists finally went to the field and saw that combat itself not predisposition precipitated breakdown leading military psychiatrists switched their emphasis

from screening to prevention and treatment But this switch was too little too late and slowed by a year long series of Inspector General investigations even while numbers of psychiatric casualties soared Ironically despite and even partly because of psychiatrists wartime performance plus the emotional toll of war postwar America soon witnessed a dramatic growth in numbers popularity and influence of the profession culminating in the National Mental Health Act 1946 But veterans with PTSD not recognized until 1980 were largely neglected *Congressional Record* United States.

Congress,2012 *The Rocket Lab* Michael G. Smith,2023-05-15 The Rocket Lab Maurice Zucrow Purdue University and America s Race to Space focuses on the golden era of space exploration between 1946 and 1966 specifically the life and times of Purdue University s Dr Maurice J Zucrow a pioneering teacher and researcher in aerospace engineering Zucrow taught America s first university course in jet and rocket propulsion wrote the field s first textbook and established the country s first educational Rocket Lab He was part of a small circle of innovators who transformed Purdue into the country s largest engineering university which became a cradle of astronauts Taking a chronological and thematic approach The Rocket Lab weaves between the local and national drawing in rival universities especially Harvard MIT Princeton and Caltech Also covered is Zucrow s role in the national project system of research and development through World War II and the Cold War At Aerojet he was one of the country s original project engineers dedicated to scientific technical expertise and the stepwise approach He made vanguard power plant contributions to the Northrop Flying Wing as well as the Corporal Nike and Atlas missiles among others Zucrow s work in propulsion helped to improve the country s arsenal of ballistic missiles and space launchers and as a teacher he educated the first generation of aerospace engineers This book elevates Zucrow and the central role he played in getting the United States to space *The Cultivator & Country Gentleman* ,1877

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