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### **Question 1**

1, 1 Survivorship curve 1 shows the death rate in the population very low for young and middle aged individuals, whereas type 3 curves is when the seeds and the seedlings are vulnerable to harsh growing conditions such as water shortages and are heavily eaten by herbivores.

1,2 Primary successions begins on areas not previously occupied by organism. The pioneer species are cyanobacteria, lichens and livers worts whereas secondary succession occurs on areas where a community has been removed. They are abandoned farmlands and clear -cuts in forests examples are high way roadside and areas cleared by fire.

1,3 The united nations convention to combat desertification (UNCCD) is engaged in enhancing the adaptive capacities of dry land populations and mitigate the effects of drought through national action programs that incorporate long-term strategies supported by international cooperation and partnership arrangements whereas the convention on biological diversity (CBD) is an internationally legal binding treaty with three main goals thus conservation of biodiversity, sustainable use of biodiversity, fair and equitable sharing of the benefits arising from the use of genetic resources.

1,4 Organisms described as r-species are those that emphasize in high growth rates typically exploit less crowded ecological niches and produce many offspring, each of which has relatively low probability of survivorship to adulthood, whereas the K-species display traits associated with living at densities close to carrying capacity and typically are strong competitors in such crowded niches that invest more heavily in flower offspring.

### **Question 2**

2, 1 Indigenous plants are a group of plants that would naturally occur in a fairly large geographical see are plants that grow naturally without men's influence on them for example bulbs and orchids, proteas, shrubs.

Exotic plants are plant species that are introduced to the region in which they are not native. Many exotic plants tend to be invasive and may influence the growth and existence of endemic and indigenous organisms examples include purple beauty berry, shrub commonly cultivated as an exotic ornamental.

Plant invaders are plants that have proven potential becoming invasive but which nevertheless

have certain beneficial properties that warrant their continued presence in certain circumstances

2.2 There are three categories stipulated by the CARA legislation and these are declared weeds, they are prohibited plants that will no longer be tolerant on land or on water surfaces, neither in rural nor urban areas and examples of declared weeds are seed producing hybrid of lantana species, several Australian acacia species. The second category is the plant invader (commercial value), these are plants that have proven potential of becoming invasive but have less certain beneficial properties that warrant their continued presence in certain circumstances and examples include gum trees and pine trees. The third category of plant invader is ornamental value, these are undesirable plants that have proven to be potentially invasive but most of them are popular ornamentals or shade trees that will take long to be replaced for example Jacaranda and white mulberry.

2.3 Diagram attached below

### **Question3**

3.1 The advantages and disadvantages of genetically modified plants.

#### ADVANTAGES.

- Better for the environment, they require fewer chemicals to thrive.
- Resistance to diseases.
- Increased flavor and nutrition.
- Longer shelf life.
- It is affordable.

#### DISADVANTAGES

- Cross contamination.
- Allergies on the rise.
- Less effective antibiotics.
- Not enough testing.
- Lower level of biodiversity.

3.2 The ozone layer is an important gas because it absorbs ultra violet radiation from the sun, preventing most of it from reaching the earth's surface. The ozone layer shields the planet from the radiation from the earth's harmful effects; it regulates the earth's climate. However ozone depletion has a great effect on plants in that physiological and developmental processes of plants are affected by UV B radiation. Ultra violet light can cause changes in the molecules of the plants such as those that control growth regulation and this could mean smaller plants, different flowering times and problems for pollination cycle.

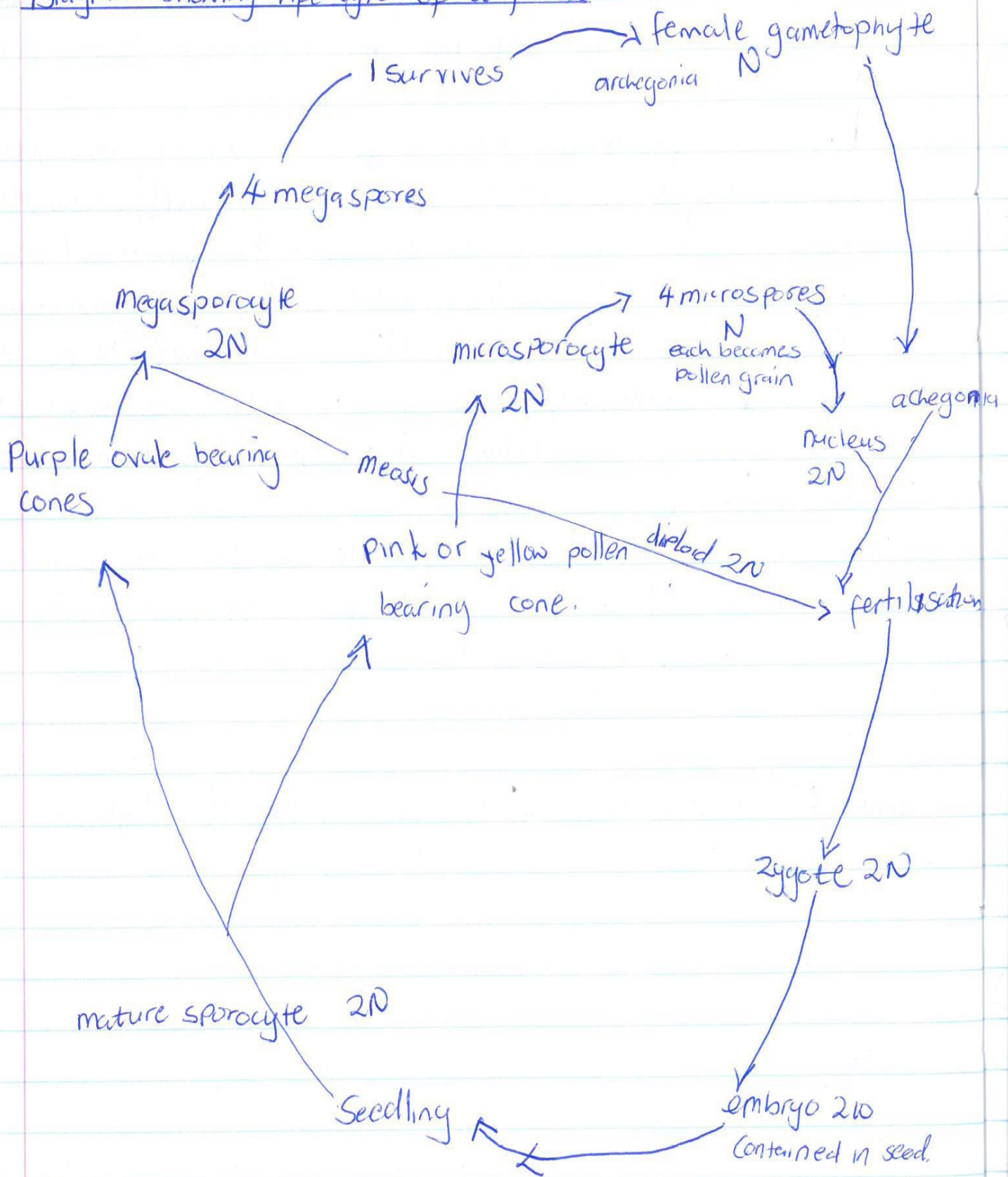
3.3 Drivers of environmental change are broad categories of factors that influence biodiversity directly, examples included land use, climate change. The government provides constitution which is stated as the right to an environment that is not harmful to health or well-being. To

provide this the following measures were taken into consideration thus prevent pollution and ecological degradation, promote conservation, secure ecological sustainable development and use natural resources ,while promoting justifiable and social development.

#### **Question 4**

- 4.1 Osmoregulation and excretion in denophyta---- pusule.
- 4.2 Movement of diatoms----- non mortile.
- 4.3 Re -establishment of cell size in the Bacillariophyta----- auxospore formation.
- 4.4 Conjugation in spirogyra-----scalariform and lateral.
- 45 Feeding in heterotrophic Euglenophyta----- by consuming bacteria and algae.
- 46 Detection of light intensity in Euglena and Chlamydomonas----

Diagram showing life cycle of a pine



REFERENCES

Plant Biology Graham L.E. Second edition