**A.C.K NAMBALE DIOCESE EXAMINATIONS**

**BIOLOGY 231/3**

**(PRACTICAL)**

**NOVEMBER 2021- 13/4HOURS**

**MARKING SCHEME**

1.(a)(i) A white precipitate formed

 (ii) Exhaled air contains carbon (IV) oxide which reacts with calcium hydroxide to form a white precipitate (Calcium carbonate)

1. Calcium hydroxide + Carbon (IV) oxide Calcium carbonate + Water

 Or

2CaOH +CO2 2CaCO3+H2O

1. – Water/Moisture
* Heat energy
* Oxygen, Nitrogen + rare gases (name all)
1. Alveolus Bronchioles Bronchus Trachea

 - (Each ½ mks x 4 =2mks)

 -Correct order

(b) (i) -Has broad lamina to increase surface area for gaseous exchange

 - Has thin lamina to increase rate of gaseous exchange by reducing diffusion distance

 - Has cuticle for gaseous exchange

(ii) -Sub-division: Angiospermae/Angiosoermaphyta/Angiospermatophyta

* Class : Dicotyledonae

2.(a) (i) – No colour change/Iodine colour persists

 (ii)Starch absent/Don’t store starch

1. (i) Colour changes to purple/violet

 (ii)Proteins present/stores proteins

1. – is epigeal germination

 -The Hypocotyl grows faster/more rapidly than the epicotyl

 -This pulls the cotyledon and plumule out of the soil

(d)(i) –Oxidise food/glucose to provide energy for germination

 OR

 -Oxygen is used in respiration to provide energy for germination

 (ii) –Hydrolyse stored food

 -Activates germination enzymes

 -Provides medium for biochemical reactions

 -Softens testa to allow emergence of plumule/radicle

(iii)-Food storage.

 -Protects plumule and radicle from mechanical damage.

 -May photosynthesise in seedling

3. (a) K- Thoracic Vertebrae

 L- Humerus bone

 (b) (i)

 (ii) –Has a long neural spine to increase surface area for attachment of muscles.

 -Has tuber facets to articulate with ribs

 -Has a large centrum to supper more height

(c) K-Thoracic /chest region

 L-Fore-limbs

d) (i)-Scapula

 (ii)Radius and Ulna bone

(e) Ball and Socket joint