

1. a) J – No reaction
K- Fast Reaction in fizzing and firstling
L – Slow reaction in fizzling and frusting
M – Fast reaction in Fizzling and frosting
- b) i) Reaction is fast in k while in J, there is no reaction
ii) Equal reaction
- c) i) There was no reaction in test tube J because boiling destroyed / denatured enzyme catalase while in v, the reaction was fast because grinding increased the surface area for enzyme action
ii) Reaction rate was equal / same because both cubes were ground increasing surface area for enzyme action.
- d) Hydrogen peroxide + water + oxygen
2. a) J lungs
K Gill
- b) They both act as a site for gaseous exchange
- c) X trachea
Y lung
Z heart
- d) i) 1 Gill rakers
2 Gill bar
3 Gill filament or lamellae
ii) 1 Has spear like projections for filtering solid impurities
3 Are highly folded to increase surface area for oxygen to diffuse
- a) Bean seed
Two scars
- b) Plantae
Angiospermae
Dicotyledonae
Two cotyledons / seeds leaves
3. a) i) J - Atlas vertebra
K - Axis vertebra
L - Thoracic verbra
ii) J - articulates with, and supports the skull
- Allows nodding movements of the head
K - Articulates with the atlas
- Re-enforces the support for the skull
- Allow for the side rotation of the head
L - For articulation with ribs.
- For attachment of the intercostals muscles
- b) i) - Long neural spine which offers a large surface area for the attachment of back muscles.
- Large centrum for articulation with other thoracic vertebra
- Has facets on each transverse process to articulate with ribs
ii) Spinal cord
- c) - Long and well developed neural spine
- Well developed centrum
- Absence of vertebrarterial canal
- Facets for the articulation of the ribs

(3mks)