## **5.2.3** Biology Paper 3 (231/3)

- 1. (a) (i) Epigeal germination; (1 mark)
  - (ii) Hypocotyle grows faster; raising the cotyledons above the ground level;

(2 marks)

(b) Protection of the embryo/plumule/plumule and radicle; Food storage;

Photosynthesis;

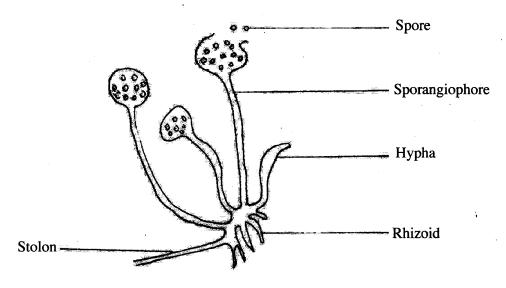
(3 marks)

(c) Emergence of the hypocotyle exposes it to light;
Light stimulates migration of auxins to the lower side of the hypocotyle;
High concentration of auxins; on the lower side;
Stimulates faster rate of growth than on the upper side;
Faster elongation of the lower side straightens the seedlings;

(6 marks)

- 2. (a) (i) Rhizopus/Bread mould/cassava mould/ugali mould/mould/mucor; (1 mark) *Rhizopus spp*;
  - (ii) By spores/sporulation/sporulation; (1 mark)

(iii)



Mg x5 - x 25

|    | Drawing (D)               | $L=5 \max 2 r$ | narks |
|----|---------------------------|----------------|-------|
| 1. | Continuous outline        | D = 1          | •     |
| 2. | Use of double lines       | mg = 1         |       |
| 3. | Stolon/Rhizoid not a must |                |       |

Max = 3 marks

| (b) | (i)              | Dicotyledonae; |
|-----|------------------|----------------|
| (0) | ( <del>-</del> / | ,              |

(1 mark)

(ii) Net/Reticulate venation/network venation; Floral parts in 5s/fours/five sepals/five petals; Broad leaf lamina/bract; Presence of leaf paticle;

(3 marks)

(iii) Insects;

(1 mark)

(iv) Conspicuous bracts/ petals/ sepals/brightly coloured petals/bracts;
 Tabular corolla;
 Landing stage/corolla stage/platform;

First correct three (3 marks)

(v) Bract;

(1 mark)

3. (a)

|   | F (pH 5)        | G (pH 7) | H (pH 9) |
|---|-----------------|----------|----------|
| Volume of solution + portion of potato        | $2.2 \pm 0.2;$  |          |          |
| Volume of solution + portion of potato + foam | $4.2 \pm 0.5$ ; |          |          |
| Volume of foam                                | $2.0 \pm 0.5;$  |          |          |

Award accuracy for volume of solution + portion of potato

 $3 \times 1 = 3$  marks

• Values should be F <; G <; H and solution + potato + foam is > solution + potato;

3 marks

• Award correct subtraction for volume of foam

 $3 \times 1 = 3$  marks

- (b) The enzyme catalase; in the potato tissue breaks down hydrogen peroxide to water; and oxygen; (3 marks)
- (c) More foam is produced at pH 9; which is optimum for catalase activity;

(2 marks)