**231/3**

**BIOLOGY**

**PAPER 3**

Form 4

Paper 3

**MARKING SCHEME**

1. A) i) yellow

ii) red

iii) acid-base indicator

B) i) color change from red to yellow

ii) the gas is acidic

C) i) white precipitate formed

ii) carbon iv oxide

D) i) respiration(aerobic)

 ii) Glucose + oxygen carbon iv oxide + water + energy

 iii) for provision of energy

1. A) class- Dichotyledonae

 Reasons - presence of two cotyledons in specimen L

 - Net venation on plumule/leaves of specimen L(reticulate)

 B) i) K- hypogeal; cotyledon remains in the ground

 L- epigeal ; cotyledons brought above the ground

 ii) K- epicotyl elongates pulling the plumule leaves and the shoot tip out of the cotyledons and out

 of the ground leaving the cotyledons in the soil.

 L- Hypocotyl elongates pulling the cotyledons enclosing the plumule above the ground

 C) H –Epicotyl

 G- hypocotyls

 D) As the bent parts exposed to sunlight, more light on the upper side causes auxins to migrate to the lower side; the increased auxin concentration on the lower side , stimulates faster elongation of cells; on the lower side leading to straightening og the seedling

 E) Both will develop a taproot system

 F) the cotyledons will part and the leaves will expand and spread out

3. a) V- Atlas

 W- Axis

 b)

|  |  |
| --- | --- |
| Bone V | Bone W |
| Has a wider neural canal  | Narrower neural canal  |
| Has a very small centrum  | Prominent centrum  |
| Has a greatly reduced neural spine  | Has a broad neural spine |
| Lack odontoid process  | Has an odontoid process  |

c) occipital condyles of the skull

d) passage of the spinal cord and fitting of odontoid process of the axis

e) name- odontoid process

 role- it fits into the canal of the atlas and allows for rotational movements of the head

f) C,F and K ( mark any one)

g) protection of the spinal cord

h) D and G ( mark any one)