**GOLDEN ELITE EXAMINTIONS 2020**

**231/3**

**BIOLOGY**

**PAPER 3**

**(PRACTICAL)**

**MARKING SCHEME**

1 (a)

|  |  |  |  |
| --- | --- | --- | --- |
| FOOD COMPOUND | PROCEDURE | OBSERVATION | CONCLUSION |
| Starch | To 2cm3 of solution L add drops of iodine√1mk | Colour turns brown /yellow√½ mk | Starch absent½ mk |
| Reducing sugar | To 2cm3 of solution L ,add benedicts solution and boil√1 mark | Colour changes from blue to green to yellow/orange√½ mk | Reducing sugars present½ mk |
| proteins | To 2cm3 of solution L add 3 drops of NaOH followed by drops of CuSO4 and shake√1mk | solution remains blue√½ mk | Protein absent½ mk |
| Ascorbic acid (vitamin c) |  To 2cm3 of solution DCPIP add solution L dropwise shaking till in excess √1mk | DCPIP decolourised√ ½ mk | Vitamin C /Ascorbic acid present ½ mk |

(b) (i) solution in the visking tubing increases in volume

(ii) Water moves by osmosis; in the visking tubing due to the high osmotic pressure of the solution in the visking tubing

(c) Cell membrane/plasma membrane/plasmalema

2. (a) (i) A – Endosperm

 B – Radicle

 C – Plumule

 D – Plumule sheath/coleoptile

 (ii) A – stores food for the embryo;

 D – protects the delicate plumule from mechanical damage;

 (b) (i) hypogeal;

 (ii) Kingdom – Plantae; Rej plant

 Division – spermatophyte

 Class –Monocotyledonae; rej monocot/monocotyledon

 (iii) Fibrousroots

 Parallelvenation;

 Floral parts occur in three /multiples of three;

 Sheath like petiole; ***Mark first three***

(c) Has two scars;

3. (a)

|  |  |  |
| --- | --- | --- |
| Specimen | steps | identity |
| A | 1b,3a; | Arachnida |
| B | 1a,2a,4a; | Pisces |
| C | 1b,2b,5b,6b; | Chilopoda |
| D | 1a,2a,4b,7b,8a | Reptilia |
| E | 1a,2a,4b,7a; | Aves |
| F | 1b,3b,5a; | Insecta |

(b) Magnification = Diagram length = 50mm

 Actual length 100mm;

 = X 1/2 or X 0.5;