**FORM 3 PP3**

**BIOLOGY PRACTICAL MARKING SCHEME FORM THREE 2019**

1.

(a) (12marks)

|  |  |  |  |
| --- | --- | --- | --- |
| **Food substance** | **Procedure** | **Observation** | **Conclusion** |
| starch | Add 3 drops of iodine solution | Solution turns blue black | Starch present |
| protein | Add drops of NaOHAdd drops of CuSO4 | Solution turns purple | Protein present |
| Ascorbic acid/ Vitamin C | Into about 2cm3 of DCPIP add drops of food solution X | Blue colour of DCPIP persists | Ascorbic acid absent  |

(b) –body building food

 - Energy giving food

2.(a)a) Giving a reason in each case, classify the animal into the taxonomic units in the table below. (4 marks)

|  |  |  |
| --- | --- | --- |
| Taxonomic unit | Name of taxonomic unit | Feature |
| Phylum | Chordata | Presence of a notochord at a stage of embryo development |
| Class | Pisces  |  Presence of fins; presence of lateral line; Presence of gills |

.(b)i. Have moist surfaces to dissolve oxygen gas

ii .Have a thin epithelial lining for gases to move through a short distance

iii .Have a large capillary network for maximum gaseous exchange

(c i) answer on figure

ii.Counter current flow.

(d)i.Diffusion.

ii.A steep concentration gradient of oxygen gas.

(e)While in water filaments part and creates a large surface area for gaseous exchange.

When a fish is removed out of water into air, filaments sticks together reduces surface area for gaseous exchange fish suffocates and dies.

3.

**(a )**

|  |  |
| --- | --- |
|  Structure | Dispersal agent |
|  X1 | Wind |
|  X2 | Water |
|  X3 | Explosive mechanism |
|  X4 | Animal |

(b)

|  |  |
| --- | --- |
|  Structure |  Adaptive features |
|  X1 | Has wing like structures that enable it to float in wind |
|  X2 | Mesocarp fibrous and spongy to trap air;Air trapped make fruit lightand buoyant to float on water. |

(c i) Root system of R2- Tap root; star shaped xylem vessel

 Leaf characteristics of R2 –Network venation; presence of petiole;

 (ii) Polypetalous characteristic; petals are free/ petals are not fused

 (iii) Funicle