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**BIOLOGY**

**FORM FOUR PARER 3**

**TRIAL 2, 2019**

**MARKING SCHEME**

1. a) (2mks)

1b- Organism with exoskeleton

4a – Has fins

b)

|  |  |  |
| --- | --- | --- |
| **Specimen**  | **Steps followed**  | **Identity**  |
| ABCDEF | 1a, 3a1a, 2a, 4a1b, 3b, 5b, 6b1a, 2a, 4b, 7b, 8a1a, 2a, 4b, 7a1b, 3b, 5a | ArachnidaPiscesChilopodaReptiliaAvesInsecta |

c)Arthropoda reject Antropoda or arthropoda.

d) – They all have an exoskeleton

- They all have segmented bodies

- They all have jointed appendages/limbs

e)Scales;

1. a)

|  |  |
| --- | --- |
| **Test tube**  | **Observation**  |
| A  | No effervescence/no bubble production /No foam production  |
| B | High effervescence rate/high rate of bubble formation  |
| C  | Little effervescence/ bubble formation/little foam formation. |

**Reject no reaction**

b) No effervescence /bubble formation/form formation because boiling denatured the enzymes (catalase enzyme) hence hydrogen peroxides, was not broken down into water, and oxygen gas.

c) Test tube B, because crushing of the cube increased the surface area for proper enzyme (catalase) action hence a high volume of hydrogen peroxide was broken down into water and oxygen compared to the cube in test tube c which has a small surface area expose to the hydrogen peroxide solution.

d) PH, enzymes and substrate concentration contraction, enzyme inhibitors, co-enzymes and co-factors.

1. a) - P has one seed while R has many seeds
* P has a thick pericarp while R has thin
* P has distinct epicarp, mesocarp and endo carp while R have the three layer’s indistinct suture lines.
* P has a hollow seed while the seeds of are not hollow.

b) - Specimen P – Gynoecium is monocarpous placentation basal.

* Specimen S – Gynoecium is syncarpous spacentation parietal
* Specimen V – Gynoecium is syncarpous placentation is axile/central

c)

|  |  |  |
| --- | --- | --- |
| **Specimen**  | **Mode of dispersal**  | **Adaptive features**  |
| P | Water  | Hairy mesocarp /air spaces for buoyancy |
| Q | Wind | Wing-like membranous structure/extensions  |
| R | Self by explosive mechanism | Has lines of weakness/sutures  |
| S | Animals | Fleshy /succulent  |
| T | Wind | Has hair-like projections/parachute of hairs  |
| V | Animals  | Fleshy /succulent  |

d)A plan diagram of specimen V

