231/3

**BIOLOGY**

**PRACTICAL**

**Paper 3**

**MARKING SCHEME**

**ARISE AND SHINE TRIAL 1 EXAM**

**AUGUST - 2022**

(1)a). (i). Solution turns blue – black /blue/black

(ii). Indicates presence of starch in the solution

(b)(i). blue colour remains/persists/No observable colour change/No change in colour

(ii). Absent of reducing sugars

(c).

|  |  |  |
| --- | --- | --- |
| Test tube | Observation | Conclusion |
| CD | Colour change to yellow/orange/brownAcc.colour change to greenNo colour change/blue Colour remains/persists | Present of reducing sugarsGreen colour tied to little amount of reducing sugarAbsence of reducing sugars |

(d) C – Starch solution converted/hydrolysed to reducing sugars; the 30 minutes allowed hydrolysis of starch by solution K.

D – The starch solution was not hydrolysed; hence absence of reducing sugar after 30 minutes; solution L prevented the hydrolysis by K.

(e)(i) This is the human body temperature/I is the best temperature for human enzymes/favourable temperature/optimum temperature

(ii). K – amylase enzyme/diastase

 L – Hydrochloric acid/enzyme inhibitor

2. (a) Liver

(b) (i). Liver is responsible in control/regulation of blood sugar; using hormones insulin and glucagon.

(ii). Liver synthesis bile from old red blood cells; bile is required in emulsification of fats.

(c)(i). D1 - Rapid/fast effervescence/bubbling/fizzing

 D2 – No effervescence/bubbling/fizzing

(ii). Detoxification

(Poisonous H2O2 is broken to water and oxygen) in presence of enzyes catalase

(iii). D1 – presence of enzyme catalase; converts poisonous hydrogen peroxide to water and oxygen

D2 – Absence of enzyme catalase; boiling/heating denatures the enzyme; hence no reaction took place.

(d). Liver cirrhosis

Hepatitis A or B Acc/Hepatitis

Jaundice

3 (a). A – Thoracic vertebra rej . Thoracic bone

B - Lumbar vertebrae rej. Lumbar alone

C - Humerus

(b). Abdominal region acc.lumbar region

(c). - Long transverse processes

- Short broad neural spine

- Extra processes/metapophysis

* Large centrum.

(d) (i). Identity – Neural spine

* Significance – Increase surface area for attachment of muscles.

(e)(i). Hinge joint

Reason – Presence of condyles/grooves

 Which articulate with depression of next bone

(ii). Ball and socket joint

Reason - Head shaped like a ball/rounded end

(f). Pectoral girdle.