N

Trial Examination 2

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Total	/ 30

Paper 2

Duration: 1 hour 15 minutes

Section A

Answer **all** the questions in this section.

Level 2

1. Figure 1 shows an electron micrograph of part of an animal cell.

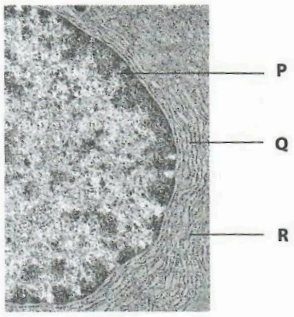

Figure 1

(a) (i) Name structure **P**. [1]

(ii) State the function of structure **P**. [1]

(b) State **two** structural differences between a plant cell and an animal cell. [2]

2. Figure 2 shows the blood circulation between the small intestine and the liver.

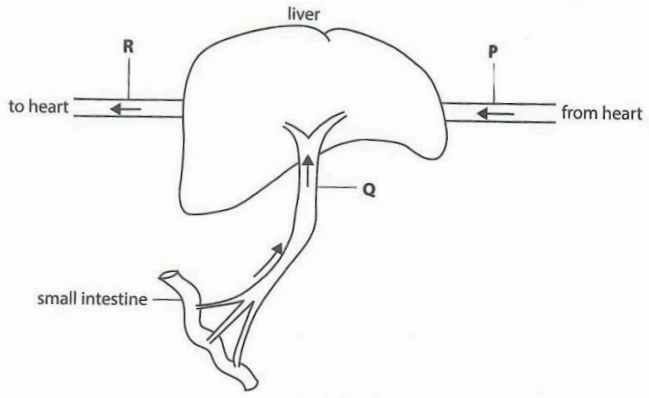

Figure 2

(a) Blood circulation between the liver and the small intestine is shown in Figure 2. They carry different substances at different concentrations. Complete Table 1 with the corresponding blood vessels **P**, **Q** and **R**. [3]

Table 1

Description	Blood Vessel
The vessel with highest concentration of glucose	
The vessel with highest concentration of urea	
The vessel with highest concentration of oxygen	

(b) The liver is involved in the regulation of blood glucose concentration. Suggest how the liver processes glucose after a large meal with high carbohydrate content has been eaten. [2]

3. Figure 3 shows the thickness of the wall in types of blood vessels in human bodies.

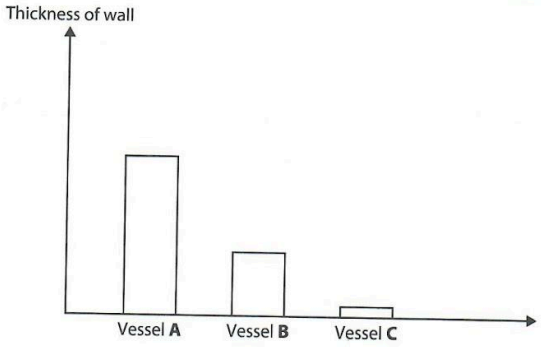

Figure 3

(a) Complete Table 2 by matching blood vessels **A**, **B** and **C** with capillary, vein, and artery. [3]

Table 2

Blood Vessel	Name of the Blood Vessel
A	
B	
C	

(b) Give **two** differences between red blood cells and white blood cells. [2]

Section B

Answer any **two** questions in this section.

4. Figure 4 shows the oxygen consumption per minute during and after a period of exercise.

The exercise starts from 0 minute and ends at 25 minutes.

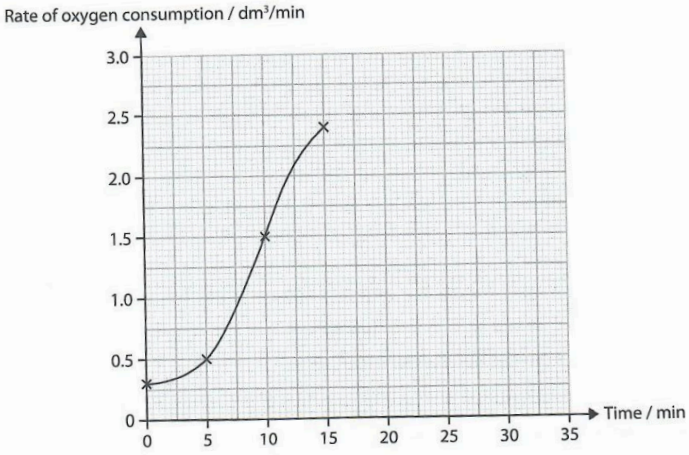

Figure 4

Table 3 shows the data after the first 15 minutes.

Table 3

Time / min	Oxygen Consumption / dm³/min
20	2.4
25	2.4
30	0.6
35	0.3

(a) On Figure 4, plot the data presented in Table 3. [3]

(b) State the change in oxygen consumption during the first 15 minutes of exercise. [1]

(c) Explain why there is an increase in oxygen consumption during the first 15 minutes of exercise. [2]

(d) Explain why the oxygen consumption level did not return to the resting value after the exercise ended. [2]

5. Figure 5 shows the effects of temperature on enzyme activity.

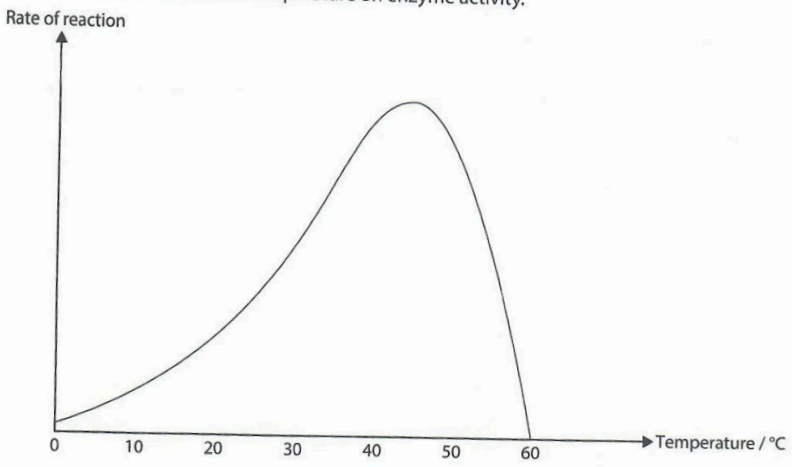

Figure 5

(a) (i) State the optimum temperature of the enzyme. [1]

(ii) Describe the relationship between temperature and enzyme activity. [3]

(iii) Explain what happens to the enzyme at 60°C. [2]

(b) State **two** factors affecting enzyme activity other than temperature. [2]

6. Figure 6 shows the changes of the hormones and uterine lining in a menstrual cycle which lasts for 28 days.

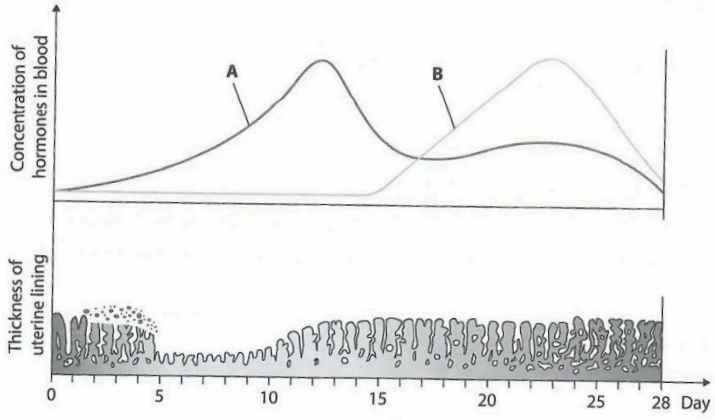

Figure 6

(a) Table 4 shows the day(s) in which a particular event takes place. Select the most appropriate answer from the following list to complete Table 4. [2]

- Fertilisation
- Menstruation
- Implantation
- Ovulation

Table 4

Day(s)	Event Likely to Happen
Day 14	
Day 0 to Day 5	

(b) Describe the changes in the thickness of the uterine lining from Day 6 to Day 28 if no fertilisation occurs. [2]

(c) Identify hormones **A** and **B**. [2]

(d) Figure 7 shows a diagram of the male reproductive system.

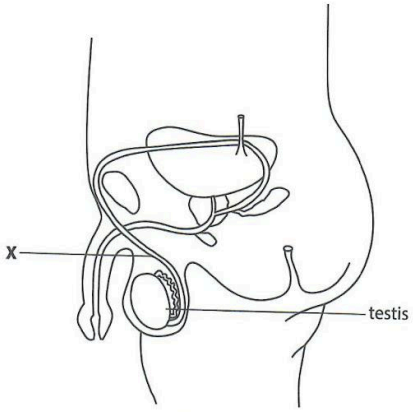

Figure 7

(i) During a particular surgery, structure **X** is cut and tied. Identify structure **X**. [1]

(ii) Explain why the man who underwent this surgery became infertile. [1]