

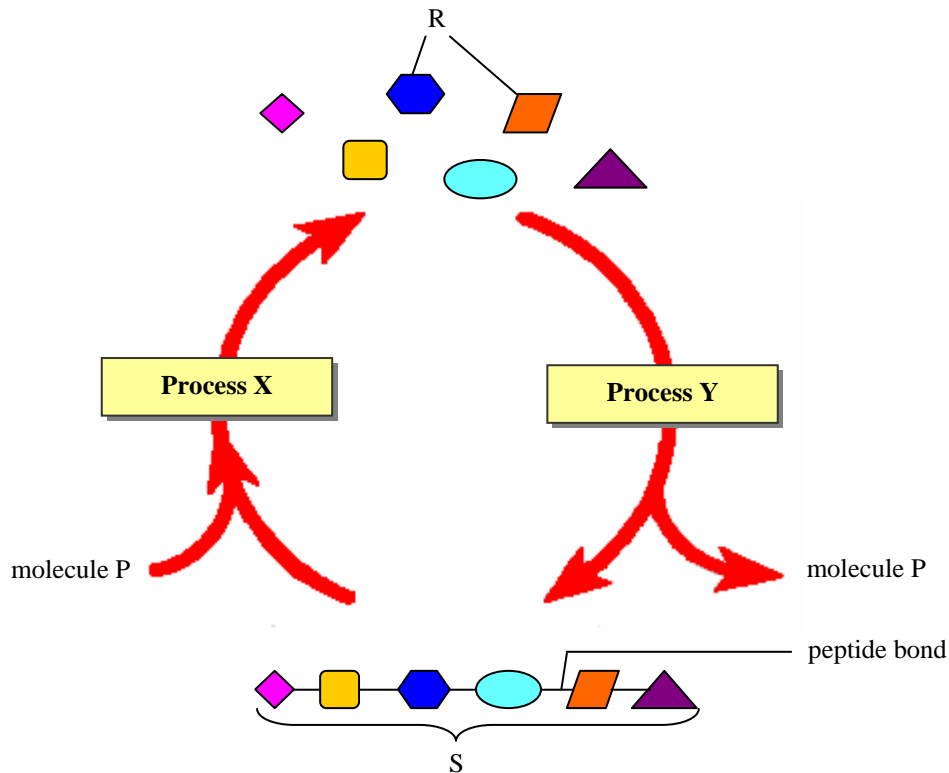


## CHAPTER 4: CHEMICAL COMPOSITION OF THE CELL



### Paper 2 (Section A – Structured Items)

1. The diagram below shows the two important processes in the metabolism of protein in the human body.



- (a) Name the following substances.

P: \_\_\_\_\_

R: \_\_\_\_\_

S: \_\_\_\_\_

[3 marks]

- (b) i. Name process X.

\_\_\_\_\_

[1 mark]

ii. Explain how process X is related to P, S and R.

---

---

[2 marks]

iii. Name the type of enzyme required in this process.

---

[1 mark]

(c) i. Name process Y.

---

[1 mark]

ii. Explain how process Y is related to P, S, and R.

---

---

[2 marks]

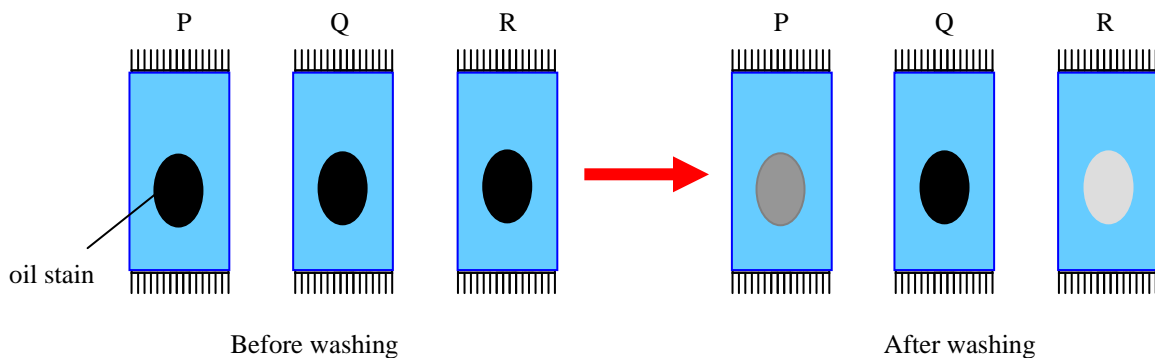
(d) S is also called the primary structure. Explain the meaning of 'primary structure'.

---

---

[2 marks]

2. The diagram below shows three similarly oil-stained towels, P, Q and R, before and after they were washed using the same type of detergent.



(a) The detergent contained a type of enzyme and the three towels were washed at temperatures of 15°C, 35°C and 65°C.

i. State the type of enzyme present in the detergent.

\_\_\_\_\_ [1 mark]

ii. Explain your answer in (a) i.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [2 marks]

(b) i. State the temperature at which each of the towels was washed.

P: \_\_\_\_\_

Q: \_\_\_\_\_

R: \_\_\_\_\_ [3 marks]

ii. Explain your answer in (b) i.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [2 marks]

(c) The oil stain in R was completely removed during the washing. Give **two** reasons for this.

1. \_\_\_\_\_

2. \_\_\_\_\_ [2 marks]

(d) What type of enzyme should be added to a detergent for washing blood-stained clothing? Give a reason for your answer.

\_\_\_\_\_  
\_\_\_\_\_ [2 marks]