

**Biology**  
**UNIT: 4BI1**  
**Science (Double Award) 4BI1/4SD0**  
**PAPER: 1B**

**Monday 6 November 2023 – Morning**

**Diagram Booklet**

In the boxes below, write your name, centre number and candidate number.

Surname					
Other names					
Centre Number					
Candidate Number					

## INSTRUCTIONS

There may be spare copies of some diagrams in case you need them.

**THIS DIAGRAM BOOKLET **MUST** BE RETURNED WITH THE  
QUESTION PAPER AT THE END OF THE EXAMINATION.**

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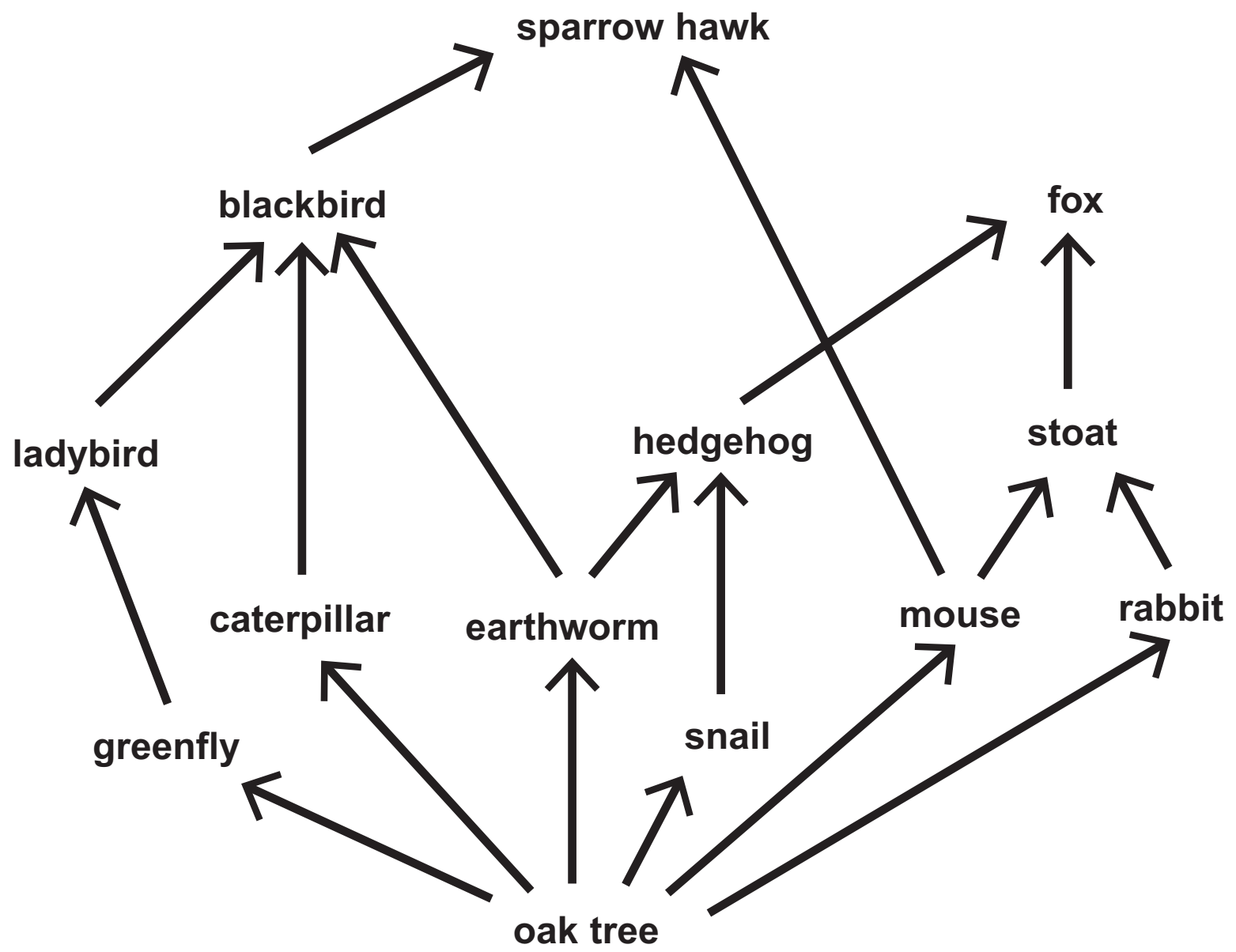
**Spare Copies**

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## Question 1



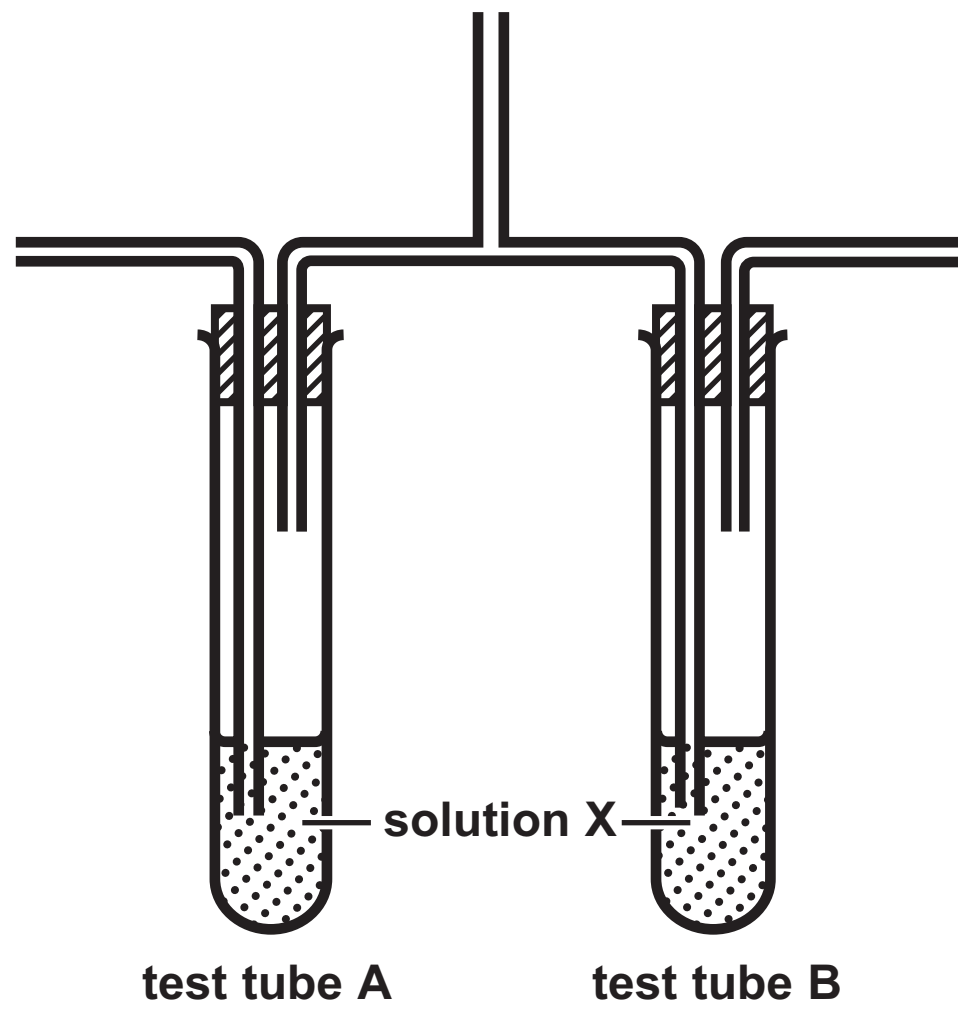
Question 2(a)

Test tube	Volume of 1 molar sucrose solution in cm <sup>3</sup>	Volume of distilled water in cm <sup>3</sup>	Concentration of sucrose solution in mole per litre
1	20	0	1·0
2	16		0·8
3	12	8	0·6
4	8	12	0·4
5	4	16	0·2
6	0	20	0·0

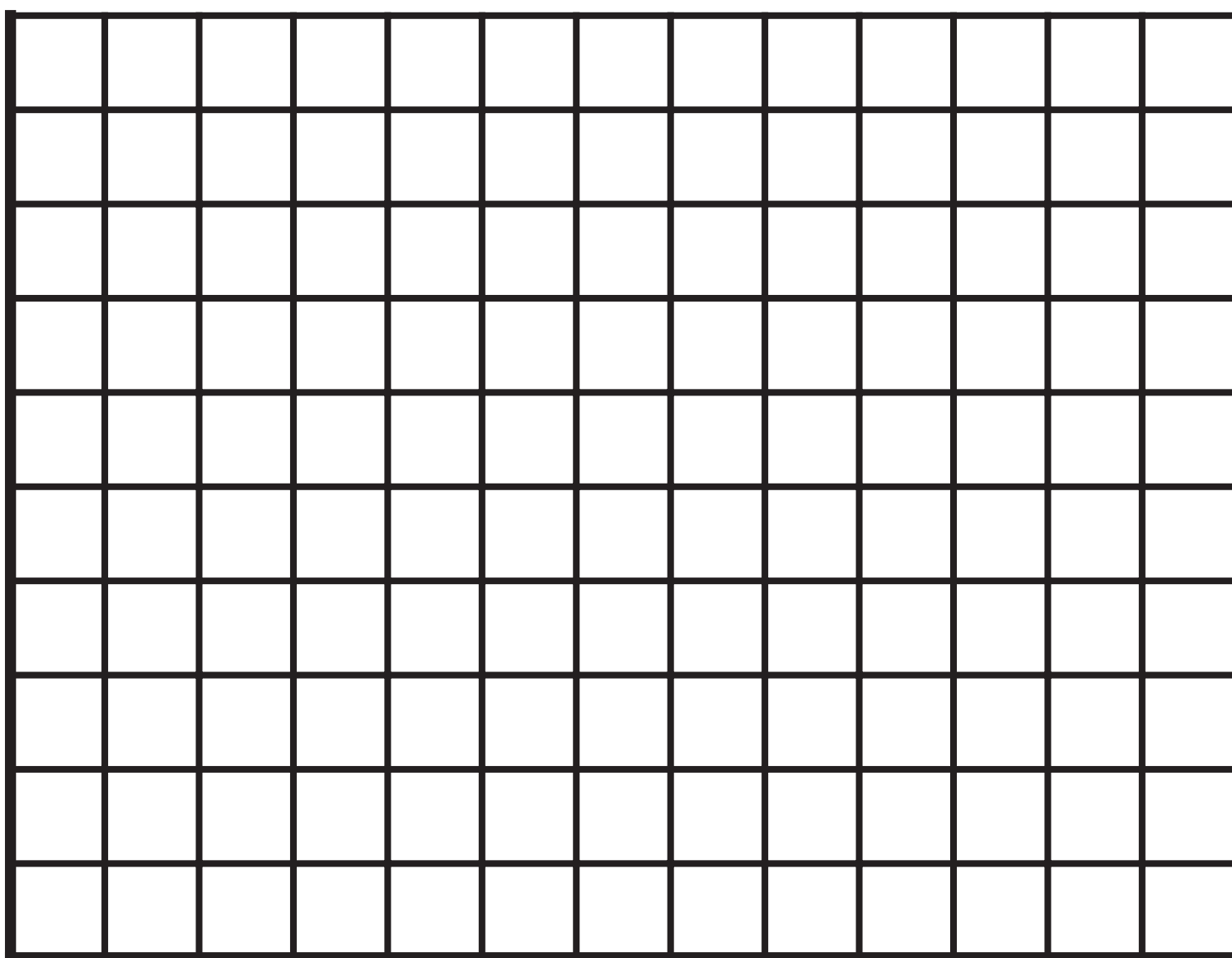
Question 2(c)

Concentration of sucrose solution in mole per litre	Original mass in g	Final mass in g	Change in mass in g	Percentage change in mass (%)
1·0	2·1	1·8	−0·3	−14
0·8	2·1	1·9	−0·2	−9·5
0·6	2·2	2·2	0·0	0·0
0·4	2·2	2·3		
0·2	2·1	2·2	0·1	4·8
0·0	2·1	2·3	0·2	9·5

## Question 3(a)



### Question 3(b)(ii)





Key



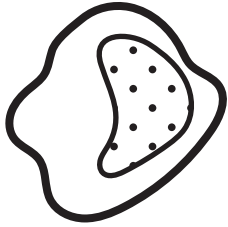
Erythrocytes



Neutrophil



Lymphocyte

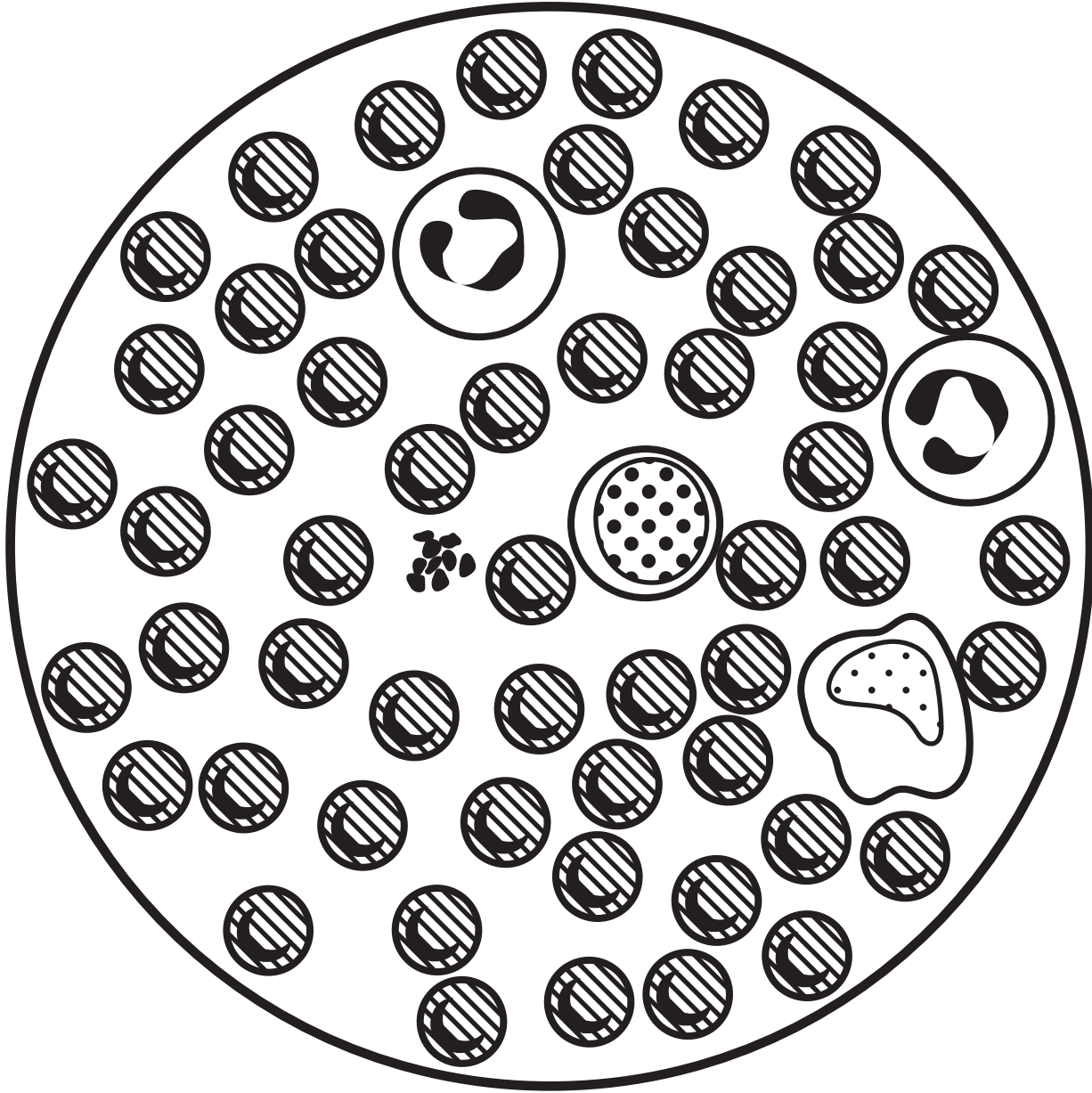


Monocyte

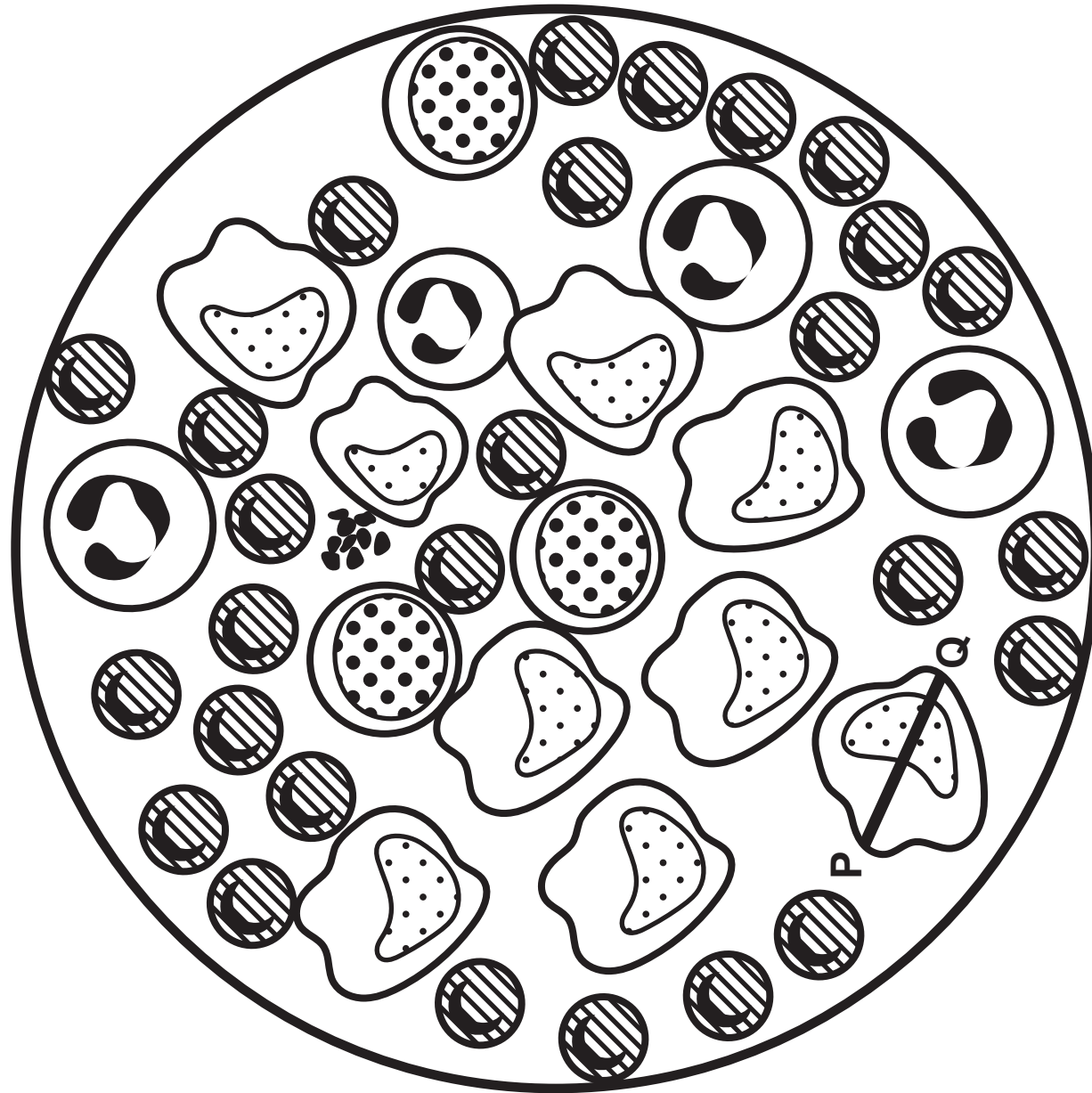


Platelets

Normal blood

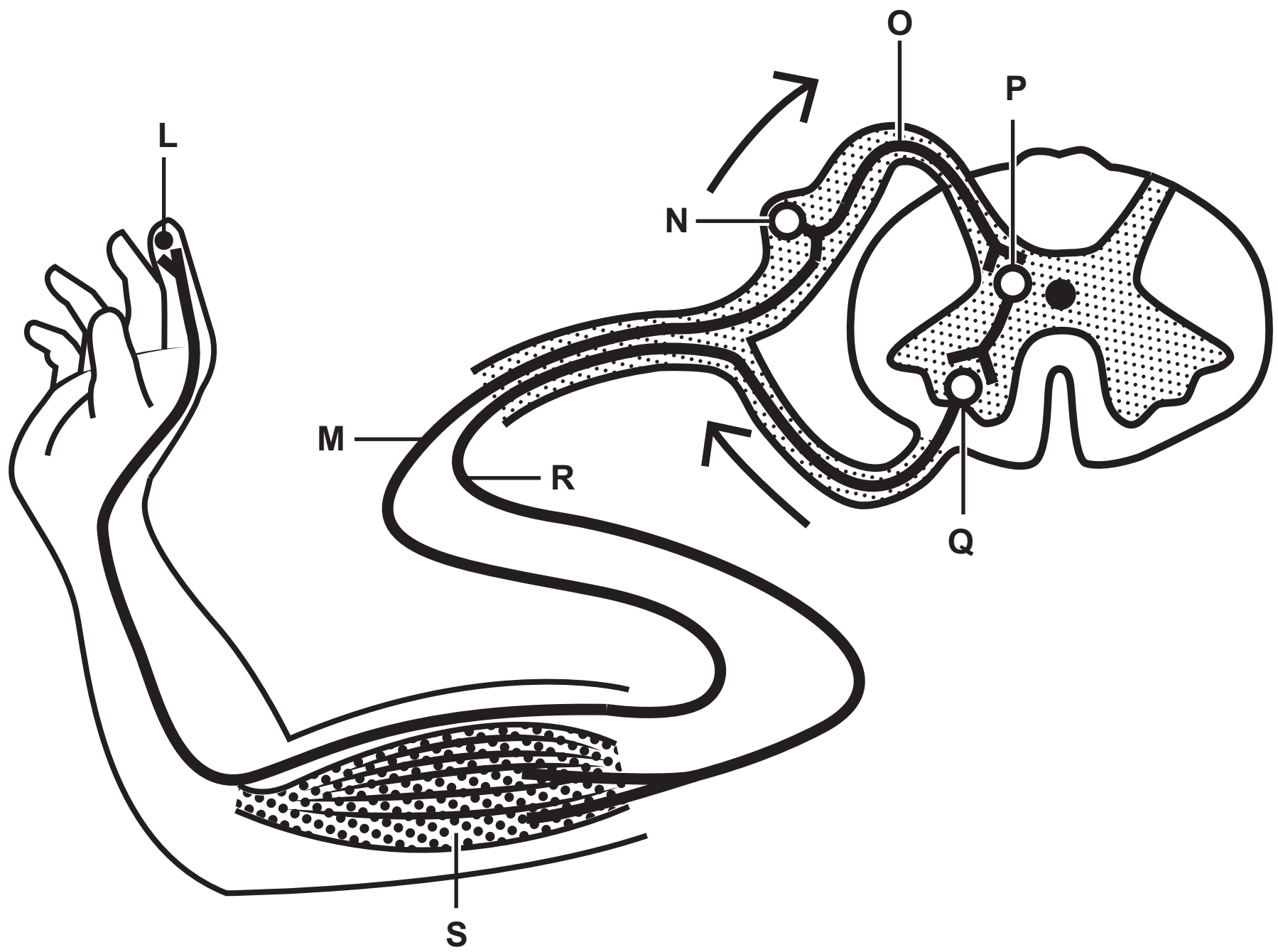


Blood condition

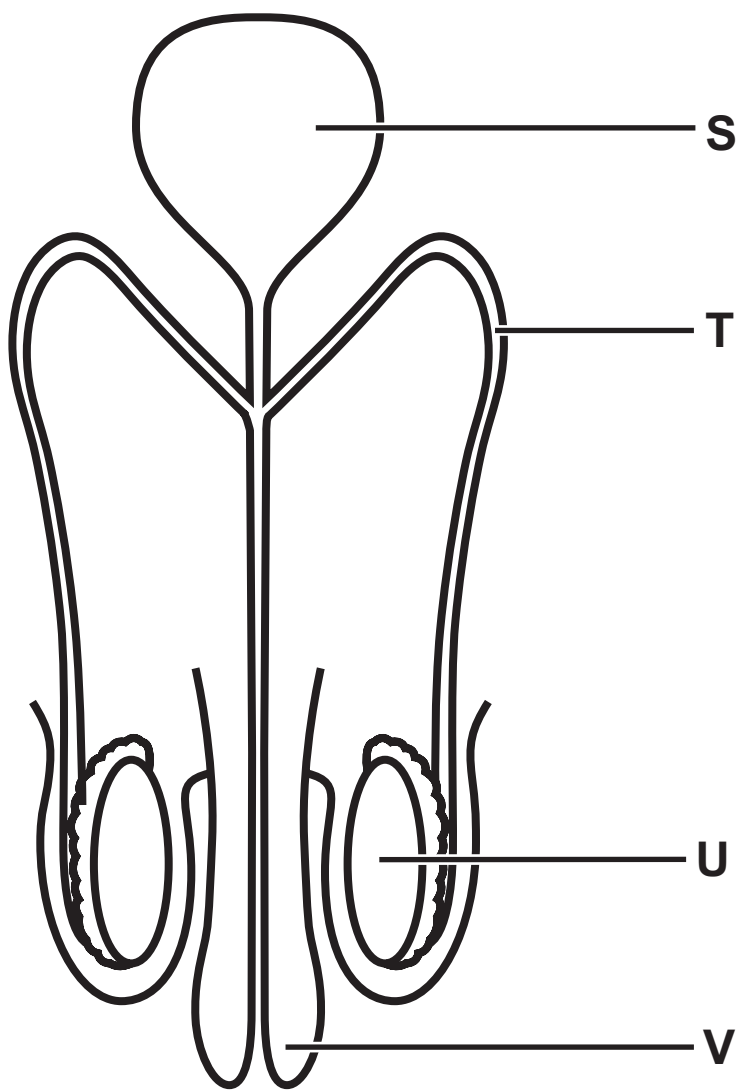
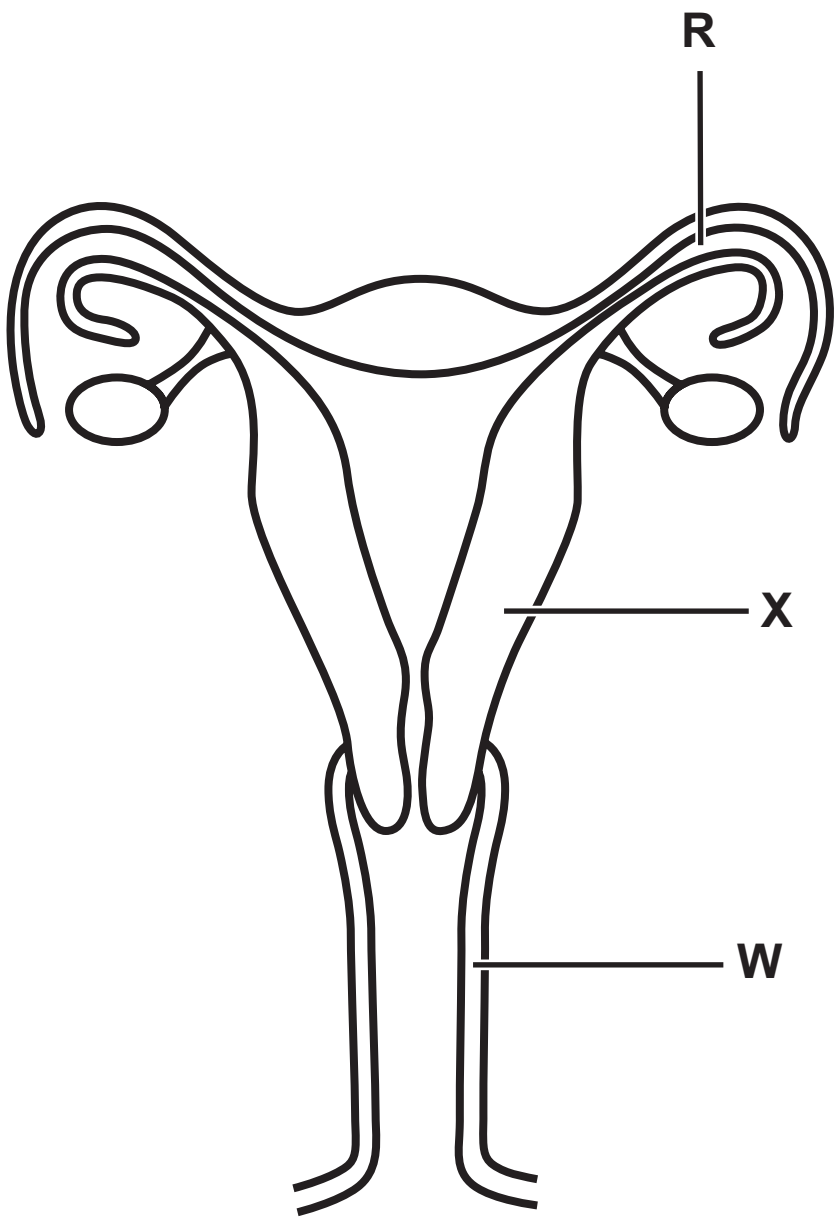


**Question 5**

## Question 6



Question 8



Question 8(c)

Outcome	Values are per 100 000 operations	
	female sterilisation	male sterilisation
number of deaths during operation	2·29	0
number of deaths following operation	0·06	0
number of major complications	6170	43
number of sterilisation failures	326	160
short-term costs in millions of US dollars	198·5	49·5

## Question 2(a)

Test tube	Volume of 1 molar sucrose solution in cm <sup>3</sup>	Volume of distilled water in cm <sup>3</sup>	Concentration of sucrose solution in mole per litre
1	20	0	1·0
2	16		0·8
3	12	8	0·6
4	8	12	0·4
5	4	16	0·2
6	0	20	0·0

### Question 3(b)(ii)

[illegible]

Question 8

