

9. Transport in animals

9.4 Blood

Paper 3 and 4

Marking Scheme

Q1.

(b)	C ; <i>any two from:</i> the cell has shrunk / AW ; water has moved out of the cell ; salt solution in C is more concentrated (than the cell contents) / AW ;	3	
(c)	<i>any two from:</i> digestion ; excretion ; transport / AW ; AVP ;	2	e.g. ref. to metabolic reactions

Q2.

(a)	A is a white blood cell ; A / white blood cell, produces antibodies / phagocytosis (described) ; B is a red blood cell ; B / red blood cell, transports oxygen ;	4	
(b)	clot (blood) / form a barrier / seal the wound / form a scab ; to prevent entry of, (named) pathogens ;	2	
(c)(i)	carbon dioxide circled ; urea circled ;	2	R each additional circle
(c)(ii)	<i>any two from :</i> testosterone ; oestrogen ; AVP ; e.g. progesterone	2	

Q3.

(a)(i)	A : transport of oxygen / AW ; B : phagocytosis AW / antibody production ;	2	
(a)(ii)	plasma ;	1	

Q4.

(b)(i)	red blood cell labelled with line and X ;	1	
(b)(ii)	(named) white (blood cell) ;	1	
(b)(iii)	plasma ; platelets ;	2	

Q5.

(b)(i)	carries / supplies oxygen ;	1	
(b)(ii)	white blood cells / phagocytes / lymphocytes ; platelets ; plasma ;	2	

Q6.

(a)(i)	transport oxygen / AW ;	1	
(a)(ii)	contains haemoglobin ; <u>b</u> iconcave (disc shape) / large surface area to volume ratio ; no, nucleus / (named) organelle ; AVP ;;	2	
(b)	platelet(s) ;	1	A named clotting factors

(c)(i)	coronary heart (disease) / CHD ;	1	
(c)(ii)	high (blood) cholesterol ; high fat diet ; obesity ; high salt intake ; (too much) stress ; high blood pressure ; (excess) alcohol consumption ; smoking tobacco ; (older) age ; gender ; genetic predisposition ; lack of exercise ; AVP ;	3	

Q7.

(a)	haemoglobin ;	1	
(b)	platelets ;	1	

Q8.

(a)	<p>red blood cell: <i>feature:</i> red blood cells smaller than (named) white blood cell(s) / ora ; biconcave (disc / shape) / no nucleus ; <i>role:</i> contains haemoglobin / transports oxygen / transports carbon dioxide ;</p> <p>lymphocyte: <i>feature:</i> little cytoplasm / large(r) nucleus / nucleus fills most of the cell ; <i>role:</i> <i>ref. to active immunity</i> / responds to, antigen(s) or vaccine(s) / produce, antibodies or antitoxins / <i>ref. to memory cells</i> ;</p> <p>phagocyte: <i>feature:</i> lobed / irregular-shaped / C-shaped / AW, nucleus ; <i>role:</i> engulf pathogens / phagocytosis / AW ;</p>	6	
(b)(i)	fibrinogen \longrightarrow fibrin ;	1	
(b)(ii)	prevent blood loss ; prevent entry of (named), pathogens / microbes ; <i>ref. to wound healing / tissue repair</i> ;	2	