

Support worksheet – Chapter 11

1 Immunity is defined as the ability of a person to resist an infection.

- a** A person can acquire immunity actively or passively. Complete the table below, which compares active and passive immunity. Tick the boxes that apply (✓) and put a cross in those which do not (✗). (3)

	Active immunity	Passive immunity
Immunity can be acquired naturally and artificially.		
The person produces memory cells.		
The person produces an immune response.		

Vaccination involves giving individuals antigens, which stimulate the immune system to produce antibodies and memory cells.

- b** Suggest **two** benefits of a vaccination programme. (2)
- c** Suggest **two** potential dangers of vaccination. (2)
- 2** The following statements refer to T-cells. State whether each one is true or false.
- a** They may produce antibodies. (1)
- b** They are small lymphocytes. (1)
- c** They help to give passive immunity to a person that has them. (1)
- d** They help to give active immunity to a person that has them. (1)
- 3** Copy and complete the table below, which shows information about hormones important in human reproduction. (8)

Hormone	Produced in	Target organ	Effect of hormone
FSH (follicle stimulating hormone)		ovary	
	ovary		growth of uterus lining after menstruation
progesterone		uterus	
oxytocin		uterus	

- 4 The table below shows how water is gained and lost from the body of an average person.

Water loss / cm ³		Water gained / cm ³	
in urine	1500	in drinking	1450
in sweat	500	in food	750
during exhalation	400	produced during respiration	350
in faeces	150		
TOTAL	2550	TOTAL	2250

- a Which of the water losses shown above would increase if the person exercised vigorously for a period of time? Explain your answer. (3)
- b In hot weather, the quantity of urine produced decreases but the concentration of this urine increases. Why is this so? (2)
- c Why is it important to ensure that water lost is replaced by an equivalent quantity of water gained? (2)
- 5 a Copy and complete the following description of the contraction of a muscle of the leg. (4)

As a nerve impulse arrives at a neuromuscular junction, the neurotransmitter _____ is released. When this stimulates the muscle membrane, _____ are released from the sarcoplasmic reticulum. These ions enable the interaction of two muscle proteins, _____ and _____.

- b Copy and complete this table by filling in the names of the structures or molecules being described. (5)

Description	Molecule or structure
supplies energy for breaking cross-bridges to reset myosin heads	
protein molecules that form the thin filament of a myofibril	
interaction of these two molecules produces the dark bands seen in microscope images of skeletal muscle	
attach muscles to bones	
lubricating substance released at certain joints to allow smooth movement	