



Question number	Answer	Notes	Marks
1 (a)	constipation; lack of <u>water</u> / lots of <u>water</u> absorbed/ drink less <u>water</u> ; lack of fibre / less vegetables / eq;		1
(b)	diarrhoea; less water absorbed; food poisoning / infection / eq;		1
(c)	peristalsis; contraction; muscles; pushed / squeezed / waves / eq;		3
(d) (i)	rectum;		1
(ii)	anus;		1
(e)	faeces versus named excretory product; undigested food versus <u>metabolic</u> waste product; anus versus kidney/lung/skin; not in cells versus in cells;	excretion is removal of faeces from the anus = 0	3
		Total	10



Question number	Answer	Notes	Marks
2 (a)	water / H <sub>2</sub> O; mineral(s) / ion(s) / salt(s) / named mineral/ion/salt;	ignore sugar / alcohol / hormones	2
(b) (i)	high conc. to low conc. / eq;		1
(ii)	(partially permeable) membrane / small molecules / eq; <u>water</u> ;		1
(iii)	high conc. to low conc. / conc. gradient; partially permeable (membrane/tubing) / eq; diffusion;		2
(iv)	same conc. in fluid and blood / normal blood conc. in fluid / correct glucose conc. in fluid / eq; if high in blood moves out of blood/into fluid; if low in blood moves into blood/out of fluid;		2
(v)	<u>ultrafiltration</u> ; small molecules or named small molecule out of blood / large molecules or protein stay in blood / pressure / Bowman's capsule / glomerulus / eq;  (selective) <u>reabsorption</u> ; glucose / ions / amino acids / water;  <u>active transport</u> ; glucose / energy / low to high conc. / eq;	mark in pairs – only allow marks from two named processes	4

Question number	Answer		Marks
2 (c) (i)	<u>renal vein</u> and <u>renal artery</u> ; <u>ureter</u> ;		2
(ii)	nearer to bladder / closer to where waste goes / eq; easier access / closer to surface / eq; ref. to length of tubes/blood vessels /eq;		2
		Total	16

Question number	Answer	Notes	Marks						
3 (a)	<table border="1" data-bbox="459 216 1010 390"> <thead> <tr> <th data-bbox="459 216 884 250">Event</th> <th data-bbox="884 216 1010 250">L tter</th> </tr> </thead> <tbody> <tr> <td data-bbox="459 250 884 319">ultrafiltration</td> <td data-bbox="884 250 1010 319"></td> </tr> <tr> <td data-bbox="459 319 884 390">glucose reabsorption</td> <td data-bbox="884 319 1010 390">B;</td> </tr> </tbody> </table>	Event	L tter	ultrafiltration		glucose reabsorption	B;		2
Event	L tter								
ultrafiltration									
glucose reabsorption	B;								
(b)	<ol style="list-style-type: none"> <li>1. iuretic) enters blood / travels in blood;</li> <li>2. tuitary / hypothalamus;</li> <li>3. <u>les</u> ADH;</li> <li>4. collecting <u>duct</u>;</li> <li>5. less permeable;</li> <li>6. les water (re)absorbed / less water into blood;</li> </ol>	ignore references to urine	Max 5						

Question number	Answer	Notes	Marks
4 (a)	C;	Ignore ureter	1
(b) )	1. (protein molecules are) large / too big / eq; 2. leave glomerulus / leave capillaries / enter Bowman's / enter renal capsule / eq;	Accept converse linked to small molecules Ignore if into glomerulus	2
(ii)	1. <u>reabsorbed</u> / (absorbed) back into blood; 2. <u>proximal</u> / <u>first</u> (convoluted) tubule / eq; 3. active transport / active uptake / against concentration gradient / eq;	Ignore other named parts of nephron	2 max
(iii)	1. urea; 2. minerals / ions / salts / named mineral ion / hormones / vitamins;		2
(c)	1. no insulin / not enough insulin; 2. high blood glucose levels; 3. cannot reabsorb (all) glucose;		max 2



(d)	1. (more) ADH; 2. increased permeability; 3. collecting duct; 4. (re)absorption of water;		3 max
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Total 12 marks

Question number	Answer	Notes	Marks
5 (a)	vessel entering is wider / eq; (increased) <u>pressure</u> ; <u>ultrafiltration</u> ;	ignore thicker ignore references to capillary structure	2
(b)	capillary / capillaries;		1
(c) (i)	active transport / active uptake; low to high concentration / against conc. gradient / eq; energy / ATP;	reject if in list	2
(ii)	respiration;  energy / ATP;  osmotic effect;		
		Total	7



Question number	Answer	Marks
6 (a) (i)	A: palisade (cell) / mesophyll / vacuole; R spongy B: <u>guard</u> cell;	2
(ii)	reduce water loss/transpiration/evaporation; prevent entry of microorganisms; Ignore waterproof	1
(iii)	carbon dioxide + water; glucose + oxygen; allow correct chemical formula	2
(iv)	diffusion / diffuses; stomata / pores / holes; concentration gradient / eq;	2
(b)	reduce water loss; less light; less photosynthesis; conserve energy / eq;	Max 2
(c)	named organ and substance:  lungs + carbon dioxide / water kidney + urea / urine / water / salts / eq  skin + sweat / water / salts / urea / eq liver + bile;;	2

Total 11 Marks