Question number	Answer	Notes	Marks
1 (a) (i)	obtain <u>light</u> for <u>photosynthesis</u>;		1
(ii)	1. light / lamp; 2. dark room / even illumination / same light intensity everywhere / eq;	ignore temperature / species / water	2
(iii)	plant upright / clinostat / not on its side / eq;	allow answers that describe a clinostat	1
(b) (i)	less/no transpiration / less water loss / less evaporation / prevent wilting / prevent flaccid cells / eq;	ignore drying out	1
(ii)	1. ess/no carbon dioxide; 2. photosynthesis; 3. less glucose / starch / carbohydrate; 4. less cooling / less transport of water / less transport of mineral ions;	ignore ref to gas exchange unqualified ignore respiration	2

(Total for Question = 7 marks)

<table>
<tr><th>Question number</th><th>Answer</th><th>Notes</th><th>Marks</th></tr>
<tr><td>2 (a)</td><td>
<table>
<tr><th>Description of part</th><th>Name</th></tr>
<tr><td>contains light receptor cells</td><td>retina;</td></tr>
<tr><td>neurone that sends impulses into the brain</td><td>sensory;</td></tr>
<tr><td>microscopic gap between neurones</td><td>synapse / synaptic (cleft) / synaptic (gap);</td></tr>
<tr><td>contains muscle effector cells</td><td>(iris)</td></tr>
</table>
</td><td>ignore optic</td><td>3</td></tr>
</table>

Question number	Answer	Notes	Marks
2 (b)	1 more convex / fatter / wider / thicker / eq; 2 bend light / refract ; 3 ciliary muscle / body ; 4 contract / shorten / eq; 5 suspensory ligaments; 6 slacken / less tension / loosen / less taut / eq;	more concave and wide = 0 ignore diffract ignore relax	4 max
		Total	**7**

Question number	Answer	Marks
3 (a)	**A** conjunctiva; **B** lens; **C** ciliary muscle / ciliary body;	3
(b)	B/lens gets thick(er) / wide(r) / fat(ter) / more spherical / round(er) / <u>more</u> convex / more curved / eq; ignore smaller / bigger C/ciliary muscle contract / eq; ignore constrict	2
(c) (i)	(in bright light) <u>pupil</u>; constricts / smaller / eq; allow converse or (in bright light) <u>iris;</u> gets bigger / eq; allow converse or (approaching object) <u>eyelids</u>; close / blinking; or (approaching object) <u>lens</u>; changes shape / change described; or tear (gland); dust /eq;	Max 2
(ii)	allows less light into eye / prevent damage / eq; (converse: allows more light into eye / to see / eq;) protection; focus / see clearly / eq;	Max 1
(iii)	name of hormone; eg ADH site of production ; eg pituitary effect; eg more concentrated urine / eq	Max 3

Total 11 Marks

Hormone	Site of production	Effect
ADH	pituitary	produces concentrated urine / eq
adrenaline	adrenal	increases heart rate / eq
insulin	pancreas	converts glucose to glycogen / eq
oestrogen	ovaries	thickens uterus lining, secondary sexual characteristics
progesterone	ovaries / corpus luteum / placenta	prepares uterus lining, maintains pregnancy / eq
testosterone	testes	sperm production, secondary sexual characteristics

Question number	Answer	Notes	Marks
4 (a)	removal / eq; waste products of cells / metabolism / respiration / chemical reactions;	getting rid of toxic waste = 1 ignore toxic ignore examples such as CO_2 / urea MP2 reject if ref to egestion/faeces	2
(b) (i)	r sweat / sweating / eq; evaporation / eq; cooling / heat loss / eq;		3
(ii)	vasodilation / dilate / widen / expand / eq; (more) blood to skin/surface / blood near to skin/surface; cooling / heat loss / eq;	ignore names of blood vessels ignore vasoconstriction reject blood vessels moving	3
(c) (i)	lower blood glucose / lower blood sugar / eq; glycogen; liver / muscle;	must be stated converts glucose to glycogen = 1	max 2
(ii)	1 control water level / water regulation / osmoregulation / eq; 2 permeability / eq; 3 collec ing duct; 4 water reabsorption / water into blood / water into body / less waterloss from body / more concentrated urine / less urine / eq;		max 3
		Total	13