

Name of the Student: _____

Max. Marks : 19 Marks

Time : 19 Minutes

Mark Schemes

- Q1.
- (a) Hypothalamus. 1
- (b) 1. Water potential of blood will decrease;
2. Water moves from osmoreceptor into blood by osmosis. 2
- (c) 1. Permeability of membrane / cells (to water) is increased;
2. More water absorbed from / leaves distal tubule / collecting duct;
3. Smaller volume of urine;
4. Urine becomes more concentrated. 4
- (d) 115.2 / 115.3 (cm³ minute⁻¹). 1
- (e) Any **two** of the following for 1 mark:
Muscle / body mass
Ethnicity
Exercise
Kidney disease – do not accept 'health'. 1
- [9]

Q2.

- (a) 21.59 / 21.6;

$19/88 \times 100 = 1$ mark

Accept for 1 mark - $19/69 \times 100 = 27.5\%$;

(only award if rounding correct)

Max 1 for incorrect rounding

Accept any number of significant figures

as long as the rounding is correct

2

- (b) 1. Electrical activity only through Bundle of His / AVN;
2. Wave of electrical activity passes over / through both ventricles at the same time;

For 'electrical activity' accept impulses / depolarisation / action potential

Reject messages/signals/information once only

2. Accept 'wave of electrical activity passes through the Purkinje / Purkyne fibres / tissue'

2

[4]

Q3.

- (a)
1. Complementary to receptor for acetylcholine;
 2. Binds to receptor;
 3. On postsynaptic (membrane);
 4. Prevents acetylcholine from binding;
 5. No action potential in postsynaptic neurone;
2. Accept description of 'binds'
3. Must be in context of membrane
5. Accept 'depolarisation' but not 'impulse'

3 max

- (b)
1. Takes longer to become unconscious than it does to stop blinking;
 2. No overlap of standard error;
1. Accept reference to 0.24/0.28 and 0.48/0.44 in place of longer

2

- (c)
- Different body masses but need to have comparable effects;
Do not accept 'same' effects or unqualified references to 'bias / comparison / fair test'.

1

[6]