

## Mark schemes – Biology Unit 5 homework

**Q1.** (a) (hormonal uses chemicals / synthetic) hormones to prevent an egg being released  
*allow 'to prevent maturation of eggs'*

1

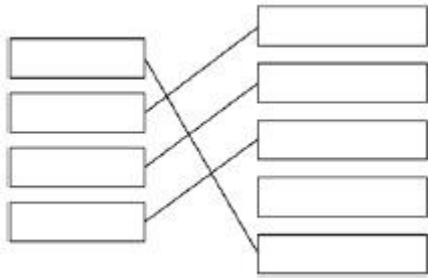
(non-hormonal has a barrier which) prevents the sperm reaching an egg **or** prevents implantation

1

a correct example of each type

[3]

**Q2** (a)



4 correct = **3** marks  
3 correct = **2** marks  
2 correct = **1** mark  
(4-5)

3

(b) time awake

1

(c) description of how to do a 'ruler drop'

1

how to measure length in cm

1

a control measure taken

**or**

how to use a conversion chart to get reaction time

1

(d) any **one** sensible reason:

for ruler drop test:

- have lots of equipment
- inexpensive equipment
- many students can do it at same time

for computer test:

- more accurate
- more repeatable
- students can cheat on ruler drop test

1

(e) 0.556..... or

$(0.44+0.49+0.83+0.27+0.75)/5$

1

0.56		
	<i>an answer of 0.56 scores 2 marks</i>	
		1
(f)	at first stays same / has slight dip (until 12 hours) <i>12 hours only needed once</i>	1
	increases from 12 hours awake <i>ignore 'increases' alone</i>	1
(g)	<b>either:</b> does support, because overall goes up <b>or</b> does not support, because it goes down / stays the same at first and only goes up after 12 hours	1
(h)	any <b>two</b> from: <ul style="list-style-type: none"> <li>• use more volunteers</li> <li>• make sure they all do the same activities at the same time</li> <li>• give them the same food and coffee/tea at the same time</li> <li>• control the age / gender of volunteers</li> <li>• make sure they all had a good night's sleep the night before the investigation began</li> </ul>	2
		<b>[15]</b>
<b>Q3 (a)</b>	$0.92 = 76.2 \times \text{time}$	1
	$\text{time} = 0.92 \div 76.2$	1
	$= 0.012$ <i>allow 0.012 with no working shown for 3 marks</i>	1
(b)	pathway <b>B</b> has two synapses <i>allow converse for pathway A</i>	1
	chemicals diffuse across each synapse	1
	which slows down the impulse	1