

**AQA, OCR, Edexcel**

**A Level**

# **A Level Biology**

**Inheritance Answers**

Name:

**M M E**

**Mathsmadeeasy.co.uk**

**Total Marks: /33**



ii) 3 Round : 1 wrinkled

1 mark

b)

i) Both alleles are expressed in the phenotype and neither one is recessive/dominant.

2 marks

ii)  $H^N H^N$ : Normal haemoglobin  
 $H^S H^S$ : Some normal and some sickle-celled haemoglobin  
 $H^S H^S$ : Sickle-celled haemoglobin

3 marks

c)

i) When an allele that codes for a characteristic is found on a sex-chromosome

1 mark

ii) – the Y chromosome is smaller than the X chromosome

- So more genes are carried on the X chromosome
- Males only have one X chromosome so they have one allele for some characteristics
- If it is a recessive allele it is displayed in the phenotype

4 marks

d)

i)

	$X^N$	$X^n$
$X^N$	$X^N X^N$	$X^N X^n$
Y	$X^N Y$	$X^n Y$

2 marks

<p>ii) A - Normal female          B - Carrier female (Normal)          C - Normal Male          D - Colour-blind male</p>	<p>4 mark</p>																									
<p>3.          a)          i) A gene that controls the expression of another gene.</p> <p>ii) 1 mark per correct line:</p> <table border="1"> <tr> <td></td> <td><b>WY</b></td> <td><b>Wy</b></td> <td><b>wY</b></td> <td><b>Wy</b></td> </tr> <tr> <td><b>WY</b></td> <td>WWYY</td> <td>WWYy</td> <td>WwYY</td> <td>WwYy</td> </tr> <tr> <td><b>Wy</b></td> <td>WWYy</td> <td>WWyy</td> <td>WwYy</td> <td>Wwyy</td> </tr> <tr> <td><b>wY</b></td> <td>WwYY</td> <td>WwYy</td> <td>wwYY</td> <td>WwYy</td> </tr> <tr> <td><b>wy</b></td> <td>WwYy</td> <td>Wwyy</td> <td>wwYy</td> <td>wwyy</td> </tr> </table> <p>iii) 12 white: 3 yellow : 1 pink</p>		<b>WY</b>	<b>Wy</b>	<b>wY</b>	<b>Wy</b>	<b>WY</b>	WWYY	WWYy	WwYY	WwYy	<b>Wy</b>	WWYy	WWyy	WwYy	Wwyy	<b>wY</b>	WwYY	WwYy	wwYY	WwYy	<b>wy</b>	WwYy	Wwyy	wwYy	wwyy	<p>1 mark</p> <p>4 marks</p> <p>1 mark</p>
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