

GCSE Biology A (Gateway)

J247/04 Biology A B4-B6 and B7 (Higher Tier)

Question Set: 10

- 1** Retinitis pigmentosa is a genetic condition that affects the eyes.
It is caused by a mutation to a gene. This mutation produces a recessive allele.
The condition causes rod cells in the retina to break down.
- (a)** Explain the meaning of these terms.
- Gene
.....
- Allele
.....
- [2]**
- (b) (i)** Two people who are heterozygous for retinitis pigmentosa are expecting a baby.
Draw a genetic diagram to calculate the probability that the baby will have the condition.
Use R for the normal allele and r for the allele for retinitis pigmentosa.
- [3]**
- (ii)** If the baby has retinitis pigmentosa, it will have normal colour vision but will not be able to see well in dim light.
Explain why.
- [3]**
- (c) (i)** Explain why stem cells could be used as a treatment for this condition.
- [2]**
- (ii)** Why is it an advantage to use stem cells from the patient rather than from another person?
- [1]**

Total Marks for Question Set 10: 11

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