**EXTENDED RESPONSE 3 MUTATIONS AND GENE POOLS (Cystic Fibrosis) RESEARCH**

**Notes (1Pg) to be surrended when Extended Answer is written**

1. What is Cystic Fibrosis (CF) and what are the symptoms? 3m
2. Where is the Gene for Cystic Fibrosis located? 2m
3. Is CF Autosomal dominant/recessive and describe the Phenotype of: -
4. Homozygous dominant
5. Heterozygous
6. Homozygous recessive 4m
7. The incidence of CF in Europe is abnormally high in comparison with other parts of the world.
8. In terms of mutation describe how this increase in the CF gene may have occurred
9. In terms of migration describe how this increase in the CF gene may have occurred
10. In terms of natural selection describe how this increase in the CF gene may have occurred
11. In terms of genetic drift describe how this increase in the CF gene may have occurred

Which of the above is most favoured and why? 10m

1. Does the heterozygous genotype contribute to ant survival advantage and if so how? 4m
2. What are the treatments for CF? 2m
3. Describe any possible cures for this condition 2m

Bibliography 3m

Total 30m

Reduced to (A) 20m

Validation Test (B) 20m

Grand Total A +B 40m