**‘There is considerable evidence that schizophrenia is caused by biological factors’.**

**Discuss biological explanations of schizophrenia. (8 marks + 16 marks)**

There are a wide range of biological explanations for schizophrenia. All are however heavily weighted strongly on the nature side of the nature/nurture debate, and ignore the role of social factors and the environment (nurture) completely; this is seen as justified because more and more credible evidence is being found to support a biological over psychological explanation

One biological explanation for schizophrenia (SZ) is the role that genetics play. This states that certain people have a genetic predisposition to SZ, and the ones who are mainly affected by this are first degree relatives to a person who already has SZ. This explanation has been tested using twin, family and adoption studies. Gottesman did a meta-analysis of 40 twin studies and found that MZ twins (who share 100% of the same DNA) had about a 58% concordance rate of getting SZ if their other twin had it, for DZ twins (who share less genes – 50%) it was at 17%. He also conducted a family study and found that the closer a person was in terms of genetic heritage to a SZ patient, the higher the concordance rate of SZ.

The twin study used a large sample of SZ twins; however, because twins are not representative of the population it is hard to extrapolate any findings from them to a population which has less than 20% of its citizens as twins. The 58% concordance rate does indicate that there is a genetic factor in the cause of SZ, but we cannot be sure it was genes alone as many of the twins were raised in the same environment, but that is why Shields conducted a study using MZ twins which were raised apart, they had a concordance rate of 50%. In both studies, if the cause was to be entirely genetic then we would expect a concordance rate of 100%, this has not been found, so, it does indicate that the environment may play a part. Additionally, by using a meta-analysis Gottesman could have included studies with validity issues; this means his results will also have had validity issues.

Another biological explanation for SZ is the dopamine hypothesis, this hypothesis suggests that the dopamine receptors are too overly sensitive to dopamine, this means that when dopamine is released into the body the patient will get a surge from it which will initiate a schizophrenic reaction; this could cause cataplexy or even catatonic stupors. Evidence to support this hypothesis lies in the study of amphetamines, researchers found that when taken they released a large amount of dopamine in the brain and caused some of the positive or Type 1 symptoms of SZ to occur in users. However, as it only accounts for the positive symptoms, we can assume that dopamine plays little part in SZ which is dominated by negative symptoms; this is supported by antipsychotic drugs having little or no impact on SZ patient’s negative symptoms. Also, can findings from drug users actually be applied to people with a mental illness? It seems a little far-fetched to think that they can be accurately applied at all.

Alternatively, research with the drug L-Dopa (used in the treatment of Parkinson’s disease) found support for the dopamine hypothesis, as it is a drug which releases dopamine, patients who overdosed on it were found to show SZ symptoms. However, there will have been ethical issues of gaining fully informed consent from them and using their attempts at an overdose to research SZ.

Further support for the dopamine hypothesis lies in the use of antipsychotic drugs for the treatment of SZ, as the drugs target dopamine receptors and block them to make them less sensitive to the dopamine and prevent it from getting into the patients system too quickly, and as this is seen to work in the treatment of SZ, many assume that the dopamine hypothesis is correct because the chemotherapy works. However, this can be argued to be an aetiological fallacy because it assumes that not having the drug was the cause of SZ, it is a trial and error method which has taken years of new drug testing to develop with very little sound research to support it.

Overall, the biological explanation of SZ are too deterministic, just because a person has a genetic predisposition or over sensitive dopamine receptors does not mean that they will without a doubt develop SZ.

**(696 words)**