Discuss the treatment of addiction. (25 marks)

One physiological treatment for addiction is called antagonist substitution, which focuses on using drugs to block or counter the effects of the drug that the person is addicted to. The most frequently prescribed antagonist drug is called naltrexone. This works by blocking the neurotransmitters (usually dopamine) that provide the person with rewarding feelings when they take the drug.

Antagonist substitution is particularly effective treatment for alcohol addiction. O’Brien et al. (1996) reported the results of two programmes using naltrexone along with more traditional behavioural treatments. In both programmes it was found that the administration of naltrexone significantly improved the likelihood of success, decreasing the participants’ craving for alcohol and increasing the number of participants who managed to abstain from alcohol.

Yet another physiological treatment for addiction is Immunotherapy. Which is an interesting idea suggested by a study by Carrera et al. (1995), who managed to stimulate rats’ immune systems to develop antibodies to cocaine. Antibodies are a function of the immune system that neutralise threats such as virus (e.g. measles). Carrera et al. generated antibodies in the bloodstream that bound with molecules of cocaine and stopped them from crossing into the brain. As a consequence, the rats were less sensitive to the effects of cocaine. Of course, there is always the problem of generalisation of animal studies to humans, as we have profoundly different physiologies i.e. a chimpanzee shares almost 99% of our DNA but this accounts for over 30,000 differences.

Since this study was carried out, animal studies with vaccines against cocaine, heroin, amphetamines and nicotine have all been undertaken, and several human trials for vaccines for cocaine and nicotine have taken place (Kosten and Owens 2005). Theoretically, the immunotherapy treatment should only interfere with the action of the abused drug and not the reward system or any other bodily processes.

A strength of physiological treatments for addiction (PTFA) is that they treat the physical cause of addiction, the human brain is part of the body – using the same chemicals and neurons, and thus if the body is addicted, then the mind will be. Thus, this determinism is very advantageous because with treatments such as antagonist substitutes, the effects of the abused substance are blocked and thus so is the psychological craving.

Another strength of the PTFA is that techniques such as agonist substitution are the most popular treatments used in the world today – specifically nicotine supplements (i.e. patches and gum) to help quit smoking. Silagy et al. (2007) found that nicotine replacement therapy was very effective in reducing dependence on nicotine and also from the cessation of smoking behaviour. However, this was only to a point that nicotine was still craved, and abrupt cessation was judged to be a much better alternative at this point.