Describe and evaluate theories of addiction including biological and social/psychological explanations.

(25 marks)

The physiological model for addiction is ‘physical dependence theory’ (PDT), which suggests that people become addicted because doing without the item or behaviour to which they are addicted is so unpleasant. ‘Tolerance’ e.g. as a person continues to smoke he/she becomes tolerant, and needs to engage in the activity more and more to maintain the positive feeling it gives stopping the activity may well result in unpleasant side-effects of withdrawal. PDT helps treat addiction because it models addiction as a range of physical processes – which we can quantify and counteract with chemical substances. There are three main parts of PDT: Initiation, Maintenance and Relapse.

Smoking is a form of drug addiction – the active component of tobacco being nicotine. DSM-IV-R defines it as ‘a cluster of cognitive, behavioural, and physiological symptoms indicating that the individual continues use of the substance despite significant substance-related problems. Some of the Criteria for smoking addiction are: Tolerance – larger dose needed to produce desired effect, efforts by individual to reduce control behaviour are unsuccessful, taken for longer than individual intended, lots of time spent acquiring substance and important activities are reduced or given up as a result of substance use.

Initiation, for some, is due to smoking being a pleasurable accompaniment to their relaxing activities – others a necessary aid to coping with stress. Lerman et al. (1999) have shown that people with a particular gene are less likely to take up smoking than those without it. The gene, called SLC6A3-9, works in the dopamine system - which is part of the reward system in the brain.

A strength of PDT is Ciarrochi et al (1987) noted that those addicted to gambling often have other problems such as addictions to alcohol or even shopping. It has been reported that, when giving up gambling, people may switch attention to another of their addictive behaviours. This is a means of maintaining the positive feelings received from engaging in one or other of the addictive behaviours.

Another strength of PDT is that Lerman et al. (2007) found that smokers who are deprived of nicotine show increased activity in certain parts of their brain. In the study, they used a scanner to measure blood flow in the brain. They tested the smokers just after a cigarette, and then after a single night where smokers abstained from smoking. The results showed that after the night without smoking there was an increased blood flow to parts of the brain concerned with attention, memory and also reward. They concluded that these parts of the brain become particularly active when the person is craving a cigarette.

A weakness of PDT is that a study of over 300 monozygotic (identical) twins and roughly 200 same-sex dizygotic (non-identical) twins was used to estimate the