Topic 6: Biopsychology
Extended Question Answers

0 9 Outline and evaluate **one or more** ways of studying the brain.

[8 marks]

Functional magnetic resonance imaging (fMRI) is a method of studying the brain founded on the assumption that the more active regions of the brain require the most energy, which is in the from if glucose and oxygen found in oxygenated blood. Therefore it can be assumed that these active areas have the greatest level of oxygenated blood flowing through them. Patients are placed in a scanner to test this, with researchers even asking patients to complete tasks within the scanner, such as viewing a visual stimulus to see if there is an association between psychological processes and regions of the brain. **AO1**

fMRI has the benefit of being a non-invasive method of studying the brain requiring neither surgical intervention or the use of harmful radiation. It also offers a more objective way of understanding psychological phenomena than self reports do. In fact, it can also be used in circumstances where giving self report is not possible, such as in the case of patients in a vegetative state. One researcher asked a patient in a vegetative state to think of tennis to let his physicians know if he was in amy pain. This was possible as thinking of tennis has been found to be associated with increased brain activity in certain regions which allowed the researcher to conclude that the patient was not in any pain. **AO3**

Although fMRI is non-invasive, it requires expensive machinery that relies on the individual in the scanner staying very still- making it not cost effective and also not routinely used on children. In addition to this, it is a very indirect way of studying the brain, focusing on changes in blood flow rather than on neural activity. This suggests that it cannot necessarily be seen as a quantitative measure of determining correlations between psychological process and brain activity. **AO3**

Marks: 8