

Question 26 (7 marks)

(a) Why do pigs produce less methane than cattle or sheep?

3

Pigs are monogastrics as opposed to Sheep + Cattle who are ruminants. This means that digestion is more efficient as it is done more quickly and autonomously. In Ruminants microbes produce methane as they break down cellulose.

(b) Explain, using an example, how an animal's feed can be adjusted to meet changing energy and protein requirements.

4

Ruminant By using forms of by-pass protein and animals increasing need for protein can be satisfied. Protein needs increase during periods such as gestation or growth in a young animal. "By-pass protein" by-passes the function of the rumen and is digested instead by the abomasum or "true stomach" where it is broken down into amino acids where it can be quickly utilised by the animal (for the growth of the foetus or muscle in the young animal.)