

Q1. (a) Examine the feed labels of two sheep creep rations and answer the following questions.

Lamb creep		Finishing Ration	
Crude Protein	18%	Crude Protein	14%
Crude fats and oils	3.1%	Crude fats and oils	3.4%
Crude fibre	8.5%	Crude fibre	9.1%
Crude Ash	6.4%	Crude Ash	6.4%
Sodium	0.65%	Sodium	0.64%

(i) Suggest a reason why the lamb creep is formulated to have a higher % of protein than the finishing ration.

(ii) State the function of fibre in the ration formulas.

(iii) Name **one** food ingredient that could be used as a source of protein in a sheep ration.

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(iv) Copper is not included in sheep rations as there is sufficient copper in the forage and grains. Apply your knowledge of ration formulation to outline **one** role of copper in an animal's diet and outline any symptom of a copper deficiency.

Role:
Deficiency:

(b) (i) Distinguish between a *maintenance diet* and a *production diet*.

Maintenance diet:
Production diet:

(ii) Distinguish between a *bulky feed* and *concentrated feed*.

Bulky feed:
Concentrated feed:

Q2. (a) The following is the nutritional information and ingredients for a dairy ration. Examine this label and answer the following questions.

Dairy ration Components		
Crude protein	16.0%	
Crude fibre	17.5%	Vitamin A
Crude fat	3.0%	Vitamin D
Calcium	0.85%	Vitamin E
List of ingredients		
Beet pulp, rolled corn, rolled barley, molasses, citrus pulp, calcium carbonate, magnesium oxide, selenium, copper		

(i) Identify **two** features of the nutrition in this ration that makes it suitable for dairy cows in early lactation.

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(ii) Identify **one** vitamin from this ration. Identify the solubility of this vitamin **and** give **one** role of this vitamin in an animal.

Vitamin:
Solubility:
Role:

(iii) Identify one ingredient from the list that provides crude fibre to the animal.

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(v) Discuss **one** similarity and **one** difference that you might see between this ration and a ration for finishing beef cattle.

Similarity:
Difference:

(b) Discuss the relevance of animal nutrition in overall food production.
