1. (a) Define energy. What are the different forms of energy? 10

(b) Give the schematic representation of partitioning food energy in the animal body. If protein is in excess compared to the level of energy, what will happen to the excess protein? 10

(c) Describe calorimetric method of feed energy estimation. 10
2.  
(a) Define digestibility and digestibility coefficient.  

(b) Mention the different methods of estimation of digestibility and explain any one.  

(c) Enlist the essential macro and trace minerals. Write general functions of essential minerals in the animal body.  

3.  
(a) Discuss the various factors affecting the post-natal growth of female calf.  

(b) Briefly discuss the hormones necessary to maintain the breeding efficiency of the livestock.  

(c) How does an endotherm maintain is body temperature when it is too low or high?  

4.  
(a) Write the importance in practice of biosecurity in the livestock farming.  

(b) Describe the existing marketing pattern either of milk or of broiler chicken and egg and discuss the common problems seen in this.  

(c) Prepare the layout plan for establishment of goat farm for 100 animals.
5. Write short notes on any three of the following:
   (a) Care and management of rabbit reared for meat production. 10
   (b) Thermoregulatory mechanism in poultry. 10
   (c) What are chelated minerals? Mention types of chelation. 10
   (d) Legal and BIS standards for meat industry. 10

6. (a) Write various sanitation measures required for clean and safe milk and for milk plant. 10
   (b) What is synthetic milk? How will you detect adulteration in milk and milk byproduct? 10
   (c) Enumerate the various byproducts of milk. Describe the method of preparation and grading of Butter. 10

7. (a) Prospect of organic poultry production in India. 10
   (b) Nutritive value of poultry meat in comparison to other animal meat. 10
   (c) What feeding and management practices would you recommended for ruminant animals during drought and flood conditions? 10
8. (a) What are the important factors that affect the self-life of meat? Compare the various methods employed to prolong the self-life of meat.  

(b) Describe the nutritive value of poultry meat and meat byproduct.  

(c) Discuss the organ product used as food and in pharmaceuticals.