Note:— Answer any five questions including question no. 5 which is compulsory. Be brief and to the point. Parts of the same questions must be answered together and not to be attempted in between the answers to other questions.

1. (a) Explain the term Nutrient. 10

(b) List different classes of nutrients. 10

(c) What are the main functions of each nutrient class? 10
2. (a) Describe growth in Livestock. 10
(b) List the different measures of growth. 10
(c) Explain factors affecting growth in farm animals. 10

3. (a) Draw diagram of the Reproductive tract of a cow. 15
(b) Describe the functions of each part. 15

4. (a) Explain the different milk production systems in India and compare it with dairy developed countries. 15
(b) Enlist problems in collection and transportation of milk from rural areas to milk plants in India. 15
5. Write short notes on any three of the following:

\[3 \times 10 = 30\]

(a) Balanced Ration

(b) Methods of controlling heat stress on the dairy animals

(c) Opportunities in dairy farming in India

(d) Feeding of animals under drought conditions.

6. (a) Give plans for the establishment of a dairy farm of 100 crossbred cows.

(b) How will you procure the animals for establishment of a dairy farm?

7. (a) Explain the properties of good quality buffalo semen.
(b) Enumerate abnormalities of sperms. 10

(c) List steps in deep freezing of semen of bulls. 10

8. (a) Describe symptoms of heat in dairy cows. 10

(b) How the artificial insemination technology helped in improving the productivity of local cows? 10

(c) Enlist causes of poor conception through artificial insemination in cattle and buffaloes in rural areas. 10