

# ROYAL CIVIL SERVICE COMMISSION EXAMINATION

## (Technical graduates)

### Paper III- Animal Science

**Date:** 20<sup>th</sup> December 2008

**Time:** 150 minutes (2 ½ hours)

**Marks:** 100

*The question paper consists of two sections. Section A will comprise of compulsory 30 multiple choice questions and four short answer questions and Section B will have two case studies out of which only one shall be attempted. Spend about 15 minutes in reading the questions before you start writing. (All the answers should be written in the answer sheets provided separately and not on the question paper. Write the appropriate question number followed by the answer).*

#### Section-A

##### I. Multiple choice questions – 1 mark each (Pick the correct answer))

- i) The average gestation period of a cow is
  - a) 262 days
  - b) 282 days
  - c) 322 days
  - d) 365 days
  
- ii) Length of estrus cycle in ewe is
  - a) 10 days
  - b) 14-20 days
  - c) 18-24 days
  - d) 25-42 days
  
- iii) Success of an artificial insemination on a cow would not be influenced by
  - a) Quality of semen
  - b) Timing of AI
  - c) Size and length of the semen straw
  - d) Reproductive status of the cow
  
- iv) What is the normal rumen motility rate in a cow?
  - a) 1-2 per minute
  - b) 2-3 per minute
  - c) 4-5 per minute
  - d) 10-20 per minute

- v) What is the approximate time of ovulation in a cow?  
a) 15-20 hours after oestrus  
b) 10-14 hours after oestrus  
c) 2-3 hours after oestrus  
d) immediately after estrus
- vi) What is the temperature of liquid nitrogen?  
a)  $-70^{\circ}\text{C}$   
b)  $-100^{\circ}\text{C}$   
c)  $-196^{\circ}\text{C}$   
d)  $-270^{\circ}\text{C}$
- vii) The earliest time you can perform a pregnancy diagnosis by rectal examination in a cow is  
a) 30 days  
b) 35 days  
c) 45 days  
d) 55 days
- viii) The gestation period in a sow is  
a) 60-65 days  
b) 114-120 days  
c) 180 days  
d) 282 days
- ix) Young breeding female horse is called  
a) filly  
b) foal  
c) fuller  
d) fremitus
- x) Deficiency of calcium and phosphorus in cattle leads to:  
a) Weak bones and muscle  
b) Reproductive problems  
c) Low haemoglobin levels  
d) Paraketosis
- xi) To keep poultry meat and egg prices relatively constant the following factor is incorrect  
a) Cost of feed.  
b) Disease control  
c) Temperature in the pens  
d) Genetic improvement

- xii) The water composition in cow milk is:  
a) 90%  
b) 89%  
c) 87%  
d) 83%
- xiii) All the vitamins known to be required by animals must be included in the ration of poultry except:  
a) Vitamin A  
b) Vitamin B12  
c) Vitamin C  
d) Vitamin E
- xiv) The disadvantage of artificial insemination is:  
a) No bull is required to be maintained  
b) Conception rate is as high as natural breeding  
c) Cost of breeding can be reduced  
d) Services of outstanding sires cannot be extended
- xv) Bloat in cattle occurs as a result of the following:  
a) Overfeeding on Napier grass  
b) Letting the animal stand for long periods  
c) Feeding on legumes like bersem  
d) Feeding of mustard oil
- xvi) As a rule, the total dry matter to be consumed by dairy cattle should come from roughages at the rate of:  
a) About one-fourth of the ration  
b) About two-thirds of the ration  
c) About three-fourth of the ration  
d) About one-third of the ration
- xvii) Poultry chicks require ration containing about:  
a) 18-20% protein  
b) 20-22% protein  
c) 22-24% protein  
d) 26% protein
- xviii) Castrated male horse is called:  
a) Stallion  
b) Gelding  
c) Gladiator  
d) Gunner

- xix) To keep poultry meat and egg prices relatively constant the following factor is incorrect
- Cost of feed.
  - Disease control
  - Temperature in the pens
  - Genetic improvement
- xx) By animal welfare standards the following is the minimum floor space required by each egg-laying hen:
- 3 sq ft
  - 2.5 sq ft
  - 1.5 sq ft
  - 1.25 sq ft

**II) True or false – 1 mark each**

- Large animals have high metabolic rates because they have a relatively small surface area for exchanging the oxygen and nutrients required to support metabolism. (True or False)
- A cow coming into heat in the morning should be inseminated in the evening of the same day (True or False)
- A cow suffering from Milk fever will have sub normal temperature but the pupil will be constricted (True or False)
- In colour sexing of chicks, grey is the colour of male chicks? (True or False)
- Cows tend to eat the afterbirth as to prevent the odor from attracting marauding animals (True or False)
- About 20% of the piglets born will die within the first week of life and the majority of these losses are due to chilling and crushing (True or False)
- Basal metabolic rate increases much more slowly than overall body mass (True or False)
- Cage system rearing for layer poultry leads to cannibalism (True or False)
- Animal units (AU) are used in the permitting, registration, and the environmental review process. The AU for 8 mature cows weighing 500 pounds with an animal unit factor of 1.0 is 40 (true or false)
- During 'embryo transfer' the highest pregnancy rates are achieved when one embryo is transferred into each uterine horn of the recipient cow (true or false)

**II. Short answer questions – 5 marks each**

- i) What factors influences productivity in livestock production?
- ii) If you are to advice the farmers on rearing a Jersey cow in the village what managerial and feeding tips would you offer to the farmer?
- iii) What do you mean by 'flushing' the ewes and why is flushing practiced?
- iv) What is the difference between line breeding and crossbreeding?

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**Section B – 50 marks**

*Answer any one question.*

- a) What considerations would you give to formulate feed for poultry? Elaborate.

**OR**

- b) What are the applications of biotechnology options in livestock production?