

Animal Science Reviewer

By Agriculture Review

1. Which of the following volatile fatty acids (VFAs) is the main substrate for milk fat synthesis in ruminants?

- a. Propionate
- b. Acetate
- c. Lactate
- d. Glucose

2. Which stomach compartment in adult ruminants is primarily responsible for water absorption and particle size reduction (often called the "manyplies")?

- a. Abomasum
- b. Omasum
- c. Rumen
- d. Reticulum

3. Which feeding strategy is most appropriate to prevent ruminal acidosis in feedlot cattle being switched from forage to high-concentrate rations?

- a. Abruptly change to the full finishing ration to shorten adaptation
- b. Gradually increase concentrate proportion over 2–3 weeks
- c. Remove forage completely during adaptation
- d. Increase dietary starch and decrease effective fiber immediately

4. In poultry, which vitamin deficiency is most commonly associated with poor eggshell quality and decreased egg production?

- a. Vitamin B12
- b. Vitamin C
- c. Vitamin D3
- d. Vitamin K

5. Which genetic term describes the phenomenon where crossbred offspring perform better than the average of the purebred parents?

- a. Heterosis (hybrid vigor)
- b. Inbreeding depression
- c. Genetic drift
- d. Linkage disequilibrium

6. Which of the following is the best immediate on-farm test to check for adequate passive transfer of immunity in a foal or calf?

- a. Serum total protein (or refractometer reading)
- b. Fecal flotation
- c. Milk clot test
- d. Skin allergy test

7. Which meat preservation method relies primarily on reducing water activity to inhibit microbial growth?

- a. Refrigeration
- b. Canning (retort)
- c. Salting and drying
- d. Pasteurization

8. Which reproductive technology is most commonly used to synchronize estrus for timed artificial insemination in cattle?

- a. Embryo transfer
- b. Prostaglandin and/or progesterone-based synchronization protocols
- c. In vitro fertilization
- d. Cloning

9. Which of the following pathogens is a common cause of mastitis in dairy cows and is frequently isolated from clinical mastitis cases?

- a. Escherichia coli
- b. Staphylococcus aureus
- c. Pasteurella multocida
- d. Haemophilus somnus

10. In a feed analysis, which of the following methods estimates the crude protein content of a feed sample?

- a. Kjeldahl nitrogen $\times$ 6.25
- b. Van Soest NDF
- c. Bomb calorimetry
- d. Ether extract

11. Which protein source is considered a high-quality feed ingredient for poultry because of its amino acid profile and digestibility?

- a. Soybean meal
- b. Rice hulls
- c. Corn bran
- d. Sawdust

12. Which endocrine gland produces prolactin, the hormone important for lactation in mammals?

- a. Thyroid gland
- b. Anterior pituitary (adenohypophysis)
- c. Adrenal cortex
- d. Pancreas

13. What is the principal carbohydrate end-product absorbed from the small intestine of monogastric animals that serves as a major energy source?

- a. Fatty acids
- b. Volatile fatty acids
- c. Glucose (monosaccharides)
- d. Amino acids

14. Which management practice most directly reduces the risk of Salmonella contamination in commercial poultry farms?

- a. Routine use of broad-spectrum antibiotics in feed throughout the flock's life
- b. Implementing strict biosecurity and rodent control
- c. Housing birds outdoors without shelter
- d. Feeding raw swill to poultry

15. In quantitative genetics, “heritability (h^2) in the broad sense” measures which of the following?

- a. Proportion of phenotypic variance due to genetic variance
- b. Probability of mutation occurrence
- c. Ratio of additive to dominance variance only
- d. Environmental variance divided by genetic variance

16. Which condition in pigs is characterized by sudden death, fever, reddened skin, and may be prevented by vaccination against Porcine Reproductive and Respiratory Syndrome (PRRS)?

- a. Foot-and-mouth disease
- b. Swine influenza
- c. PRRS-associated reproductive and respiratory disease
- d. African swine fever

17. Which of the following is an advantage of using artificial insemination (AI) in livestock breeding programs?

- a. It guarantees 100% conception rate
- b. Allows rapid dissemination of superior sire genetics
- c. Eliminates need for heat detection
- d. Requires no training or equipment

18. Which indicator is the most direct measure of feed efficiency in meat animals?

- a. Feed conversion ratio (FCR)
- b. Average daily water intake
- c. Dressing percentage
- d. Age at first estrus

19. During post-mortem inspection in a small slaughterhouse, which condition in a carcass is an absolute cause for condemnation?

- a. Localized bruising
- b. Generalized generalized disease such as septicemia or toxemia
- c. Small abscess in a non-food organ
- d. Slight discoloration of muscle

20. Which practice improves egg storage life and reduces microbial contamination before marketing?

- a. Washing eggs and immediately storing at ambient temperature
- b. Maintaining eggs at low temperature (cold chain) and clean handling
- c. Storing eggs in direct sunlight
- d. Immersing eggs in raw wastewater

21. Which mineral deficiency in ruminants commonly causes white muscle disease (nutritional muscular dystrophy) in young animals?

- a. Copper deficiency
- b. Selenium (and vitamin E) deficiency
- c. Iodine deficiency
- d. Calcium deficiency

22. Which of the following is a measure of carcass yield defined as (hot carcass weight / live weight) × 100?

- a. Feed efficiency
- b. Dressing percentage
- c. Rate of gain
- d. Mortality rate

23. In ruminant nutrition, which component of the diet is measured by the Neutral Detergent Fiber (NDF) analysis?

- a. Soluble sugars and starch
- b. Cellulose, hemicellulose and lignin (plant cell wall)
- c. Crude protein
- d. Ether extract (fat)

24. Which breed is the principal draft and dairy-type buffalo (carabao) used traditionally in the Philippines?

- a. Murrah
- b. Swamp (local Philippine carabao)
- c. Holstein-Friesian
- d. Anglo-Nubian

25. Which measure is most appropriate to control internal parasites in grazing small ruminants?

- a. Continuous grazing on same pasture without rest
- b. Strategic deworming combined with pasture rotation
- c. Feeding only concentrates without fiber
- d. Avoiding all mineral supplementation

26. In poultry layer management, what is the typical photoperiod management strategy to stimulate and maintain egg production?

- a. Constant darkness (0–2 hours light)
- b. Increasing daylength to about 14–16 hours of light during laying
- c. Sudden change to continuous light (24 hours)
- d. No control of light at all

27. Which of these is a common post-harvest hazard in fresh milk that affects consumer safety and is targeted by pasteurization?

- a. Pathogenic bacteria such as *Listeria* and *Salmonella*
- b. Excess dissolved oxygen
- c. Low mineral content
- d. High fiber content

28. Which selection criterion would be most effective to improve growth rate in a meat-type population with moderate heritability for weight?

- a. Random mating without selection
- b. Selective breeding of individuals with high daily gain (phenotypic selection)
- c. Selecting solely on coat color
- d. Reducing nutrient density in the ration

29. Which practice during transport of livestock most reduces losses due to heat stress in tropical climates?

- a. Transporting during the hottest midday hours
- b. Providing adequate ventilation and transporting during cooler hours
- c. Overloading the vehicle to reduce movement
- d. Withholding water completely before transport

30. Which factor primarily determines the water intake of farm animals under normal conditions?

- a. Ambient temperature and dry matter intake
- b. Coat color only
- c. Presence of a milking parlor
- d. Genetic breed without environmental effect

31. Which enzyme in the ruminant forestomach microbial population is primarily responsible for breaking down cellulose to simpler sugars?

- a. Amylase
- b. Cellulase
- c. Lipase
- d. Protease

32. Which of the following is a primary reason for performing residue withdrawal times before marketing meat or milk?

- a. To increase animal growth rate
- b. To ensure drug residues fall below maximum residue limits for consumer safety
- c. To improve feed conversion
- d. To change meat color

33. Which physiological state in dairy cows requires the highest plane of nutrition to support production?

- a. Dry period (non-lactating)
- b. Early lactation (peak milk yield)
- c. Mid-gestation
- d. Hibernation

34. Which breeding system involves mating of relatives more often than expected by chance and often leads to increased homozygosity?

- a. Crossbreeding
- b. Inbreeding
- c. Outcrossing
- d. Random mating

35. In commercial broiler production, which management parameter most directly affects uniform growth and feed conversion within a flock?

- a. Uneven lighting schedules among houses
- b. Consistent temperature and even distribution of feeders and drinkers
- c. Random feed removal
- d. Sporadic vaccination

36. Which of these is a primary cause of dark, firm, dry (DFD) meat in beef carcasses?

- a. Short-term acute stress immediately prior to slaughter
- b. Long-term pre-slaughter stress leading to depletion of muscle glycogen
- c. Excessive chilling post-slaughter
- d. Lack of slaughter hygiene

37. For improving disease resistance through breeding, which type of genetic variance is most directly exploited by selection?

- a. Additive genetic variance
- b. Environmental variance only
- c. Measurement error variance
- d. Dominance variance only

38. Which component of the hen's reproductive tract is responsible for shell formation?

- a. Infundibulum
- b. Magnum
- c. Isthmus
- d. Shell gland (uterus)

39. Which processing step is essential to reduce microbial load in raw milk before it is stored or transported to minimize spoilage?

- a. Immediate chilling to 4°C
- b. Boiling at home
- c. Adding sugar
- d. Exposing to sunlight

40. Which measurement is used to estimate the energy content of feed for monogastric animals?

- a. Net energy (NE) or metabolizable energy (ME)
- b. Crude fiber only
- c. Nitrogen-free extract only
- d. Total ash

41. Which of the following husbandry practices reduces mastitis incidence in dairy cattle?

- a. Proper teat sanitation before and after milking
- b. Milking with dirty hands and equipment
- c. Overcrowding in the milking parlor
- d. Withholding dry cow therapy

42. Which amino acid is typically the first limiting amino acid in corn-soy based diets for poultry?

- a. Lysine
- b. Methionine
- c. Tryptophan
- d. Valine

43. Which on-farm cooling method helps lactating cows dissipate heat most effectively in hot, humid climates?

- a. Shade only, without ventilation
- b. Fans combined with sprinklers (evaporative cooling) in holding/milking areas
- c. Transporting cows during hottest hours
- d. Withholding water

44. Which selective breeding goal would most directly improve wool production in sheep?

- a. Selecting for increased fleece weight and fiber diameter suitable for target market
- b. Selecting only for foot size
- c. Selecting for coat color regardless of fleece
- d. Reducing feed intake to lower body size

45. Which procedure is commonly used to determine the pregnancy status of cows as early as 28–35 days after insemination?

- a. Transrectal ultrasonography
- b. Measuring blood glucose
- c. Body condition scoring
- d. Rumen pH test

46. Which factor most significantly affects the shelf life of vacuum-packaged chilled meat?

- a. Oxygen exposure and storage temperature
- b. Initial live weight only
- c. Color of the animal's coat
- d. Barn flooring material

47. Which husbandry practice is essential to reduce neonatal mortality in kid goats?

- a. Ensuring newborns receive adequate colostrum shortly after birth
- b. Separating neonates from the mother immediately for 24 hours
- c. Withholding warmth to stimulate thermoregulation
- d. Feeding only adult rations

48. Which seafood product attribute is most critical for marketing freshness in fish intended for raw consumption (e.g., sashimi)?

- a. Bright clear eyes and firm, elastic flesh
- b. Dull eyes and soft flesh
- c. Strong ammonia smell
- d. Presence of mucous and slime

49. Which of the following is the best method to estimate body condition score in beef cattle?

- a. Visual appraisal and palpation of fat cover over the loin and tail head
- b. Measuring horn length
- c. Testing blood urea nitrogen only
- d. Observing activity level only

50. Which vaccine strategy is recommended for controlling Newcastle disease in village poultry populations with variable management?

- a. No vaccination and reliance on natural immunity
- b. Routine vaccination using appropriate live or inactivated vaccines and community vaccination campaigns
- c. Only vaccinate birds after clinical signs appear
- d. Feeding antibiotics in water as a substitute for vaccination

Answer Key

1. b	14. b	27. a	40. a
2. b	15. a	28. b	41. a
3. b	16. c	29. b	42. b
4. c	17. b	30. a	43. b
5. a	18. a	31. b	44. a
6. a	19. b	32. b	45. a
7. c	20. b	33. b	46. a
8. b	21. b	34. b	47. a
9. b	22. b	35. b	48. a
10. a	23. b	36. b	49. a
11. a	24. b	37. a	50. b
12. b	25. b	38. d	
13. c	26. b	39. a	