ANIMAL SCIENCE REVIEWER BASED ON TOS (MODULE MODULE F: ANIMAL PRODUCTION AND MANAGEMENT) BY AGRICULTURE REVIEW

Visit **agriculturereview.com**

Part I. Multiple-Choice Assessment Questions

1. A commercial egg producer wants to establish a white-shelled table egg enterprise prioritizing high annual egg output, light body weight, and superior feed efficiency. Which chicken breed of Mediterranean origin best fits this production goal?

a. Plymouth Rock
b. Single Comb White Leghorn
c. Cornish
d. Brahma

2. A duck raiser near Laguna de Bay plans to supply hatching eggs to balut and salted egg processors rather than producing duck meat. Which breed choice best matches this specialized egg enterprise?

a. Muscovy duck because of its large breast yield and rapid meat growth
b. Pekin duck because it is bred exclusively for white-shelled table eggs
c. Philippine Mallard duck or Khaki Campbell because they are prolific egg-type breeds with high laying persistency
d. Rouen duck because its heavy frame maximizes egg-to-feed efficiency

3. During the first week of brooding, a farm supervisor observes day-old broiler chicks huddling tightly beneath the brooder hover and chirping loudly. What immediate management correction should be taken?

a. Increase brooder heat output and eliminate cold drafts because the chicks are chilled
b. Turn off the brooder heaters immediately because the chicks are suffering heat stroke
c. Remove the chick guard so the birds can scatter across the cold outer walls
d. Withhold drinking water for twelve hours to stop the chirping

4. As commercial broilers advance from the starter stage to the finisher stage, how must the dietary crude protein and metabolizable energy concentrations be adjusted?

a. Increase crude protein sharply while cutting metabolizable energy in half
b. Keep both crude protein and metabolizable energy completely constant from day one to harvest
c. Eliminate all cereal grains and increase dietary calcium to 4.0 percent
d. Decrease crude protein percentage while increasing metabolizable energy concentration to support shifting tissue accretion and maintenance needs

5. Why does a poultry nutritionist wait until replacement pullets approach point of lay at around 18 weeks of age before raising dietary calcium from 1.0 percent to nearly 4.0 percent?

a. Young pullets cannot absorb dietary calcium before their first molt

b. Feeding high calcium too early can cause kidney damage and visceral gout, whereas raising it just before lay builds medullary bone reserves for eggshell formation

c. High calcium during the grower phase permanently prevents feather growth

d. Layer rations require low calcium during peak egg production to prevent soft shells

6. A flock of 14-week-old growing layer pullets in an open-sided house is accidentally given two extra hours of artificial light every evening. What adverse production effect will result from this lighting mistake?

a. Delayed sexual maturity until 30 weeks of age with oversized double-yolk eggs

b. Complete cessation of feed consumption during daylight hours

c. Premature sexual maturity, yielding small-bodied pullets that lay undersized eggs and experience higher incidence of vent prolapse

d. Permanent sterility of the flock due to ovarian regression

7. A commercial egg farm suffers an abrupt slump in egg production after a caretaker mistakenly reduces the artificial lighting schedule from 16 hours to 13 hours per day in a 35-week-old laying flock. Which lighting principle was violated?

a. Never decrease daylength during the laying period because declining photoperiod suppresses reproductive hormone secretion and triggers molt

b. Never exceed 12 hours of total light per day for adult laying hens

c. Always alternate between 24 hours of light and 24 hours of darkness weekly

d. Never provide artificial light to layers once they pass peak production

8. A commercial layer house holds 2,500 hens on a given morning and gathers 2,050 eggs by the end of the day. What is the hen-day egg production percentage for that flock?

a. 78.0 percent

b. 80.5 percent

c. 85.0 percent

d. 82.0 percent

9. During flock inspection of 40-week-old laying hens, a technician handles a bird exhibiting a pale, shriveled comb, rigid pubic bones spaced less than one finger apart, and deep yellow pigmentation in her shanks and vent. What management decision is warranted?

a. Retain the bird as a top breeder because yellow shanks prove peak laying activity

b. Cull the bird immediately because these physical indicators show she is out of production and wasting feed

c. Transfer the bird to a broiler finisher ration to stimulate instant ovulation

d. Double her daily calcium allowance to bleach her shanks within two days

10. A smallholder raising Darag Philippine native chickens under a free-range scavenging system notices declining egg output and slow chick growth during the dry season when green shoots and insects become scarce. Which feeding practice most effectively maintains flock productivity?

a. Restrict birds to dry rice hulls until rainy-season insects return

b. Eliminate all drinking water during midday to encourage wider foraging

c. Provide supplemental balanced concentrate mash or scratch grains fortified with protein and calcium alongside clean water

d. Confine the flock in total darkness for 18 hours daily to conserve energy

11. Why do commercial egg farms routinely perform precision beak trimming on replacement layer pullets during the growing stage?

a. To curb feather pecking, vent cannibalism, and selective feed wastage while preserving normal eating and drinking

b. To prevent hens from broody nesting behavior on slatted floors

c. To increase daily water intake during hot summer afternoons

d. To stop pullets from pecking at grit and oyster shells

12. When evaluating broiler performance during hot Philippine summer months, why does a tunnel-ventilated house consistently outperform a conventional open-sided house in livability and feed conversion ratio?

a. Tunnel-ventilated houses eliminate the need for commercial starter feeds

b. Open-sided houses block all natural airflow and trap metabolic heat completely

c. Tunnel-ventilated houses keep birds in continuous darkness so they never move

d. Evaporative cooling pads and high-velocity exhaust fans remove excess heat and ammonia, preventing heat stress and sustaining feed intake

13. A multi-age broiler farm experiences chronic outbreaks of respiratory disease and infectious bursal disease despite strict vaccination. Transitioning to an all-in all-out housing schedule with a 14-day rest period resolves the problem. Why is this system more effective?

a. Mixing older and younger flocks strengthens passive immunity across houses

b. Housing a single age group per building permits thorough cleaning, disinfection, and pathogen die-off, breaking disease cycling between batches

c. All-in all-out management eliminates the need for Newcastle disease vaccination

d. A 14-day rest period automatically doubles the floor space capacity of the shed

14. During artificial incubation of chicken hatching eggs, the automatic egg-turning mechanism malfunctions and stops operating throughout the first 14 days. What hatchability outcome is most likely?

AGRICULTURE REVIEW

a. Chicks hatch three days earlier with heavier body weights
b. Eggs explode inside the setter due to excess oxygen buildup
c. High early embryonic mortality because the developing embryo adheres to the inner shell membrane
d. Hatchability increases because undisturbed embryos conserve yolk energy

15. A 20,000-bird caged layer operation receives complaints about strong ammonia odor and heavy housefly proliferation in the manure pits beneath the cages. Which waste management strategy best controls flies while turning manure into a safe soil amendment?

a. Prevent waterer leaks to keep manure dry, maintain pit ventilation, and compost the poultry litter aerobically so heat destroys fly larvae and weed seeds
b. Flood the manure pits daily with cold water to drown adult flies
c. Spread raw fresh wet manure directly onto nearby vegetable beds every morning
d. Seal the poultry house tightly to trap ammonia gas inside the building

16. A commercial swine farm aims to produce first-generation crossbred replacement gilts known for large litter size, docile mothering ability, and high milk production. Which pair of European swine breeds is classically crossed for this maternal line?

a. Pietrain and Hampshire
b. Berkshire and Duroc
c. Philippine native pig and Poland China
d. Landrace and Large White

17. To sire fast-growing slaughter hogs with superior carcass leanness, heavy ham muscling, and efficient feed conversion from crossbred maternal sows, which terminal boar breeds are most commonly selected?

a. Meishan or Landrace
b. Duroc or Pietrain
c. Large White or Chester White
d. Philippine native boar or Tamworth

18. A sow is bred via artificial insemination on March 1. Using the standard porcine gestation length of 114 days, around which calendar date should the herdsman expect her to farrow?

a. June 10
b. July 3
c. June 23
d. May 29

AGRICULTURE REVIEW
AGRICULTUREREVIEW.COM

19. Newborn piglets reared on concrete slatted floors in a commercial farrowing house receive an intramuscular injection of 100 to 200 milligrams of iron dextran at three days of age. Why is this intervention mandatory for confined piglets?

a. Piglets are born with limited iron reserves, sow's milk is naturally low in iron, and concrete floors prevent rooting in soil, causing nutritional anemia
b. Iron dextran acts as a broad-spectrum vaccine against classical swine fever
c. Sow's milk contains toxic levels of copper that must be neutralized by iron
d. Iron injection accelerates eruption of permanent molar teeth before weaning

20. Shortly after farrowing, a swine attendant dries the newborn piglets, ensures weak ones nurse colostrum, and clips their eight sharp needle teeth. What specific management problem does needle teeth clipping prevent?

a. Iron deficiency anemia during the second week of nursing
b. Tail biting among finisher pigs weighing over 80 kilograms
c. Premature consumption of dry creep feed before day seven
d. Udder lacerations that cause the sow to refuse nursing, as well as facial wounds among competing littermates

21. Two weeks before scheduled breeding, a swine manager raises the daily feed allowance of cycling replacement gilts from restricted maintenance intake to near full feeding. What reproductive outcome does this flushing practice target?

a. Shortening gestation length from 114 days to 100 days
b. Stimulating a higher ovulation rate to increase potential litter size at farrowing
c. Suppressing estrus signs so gilts remain calm during boar exposure
d. Preventing lactation failure by shrinking mammary fat pads

22. Why should a pregnant sow receive a restricted daily ration of around 2.0 to 2.5 kilograms during early to mid-gestation, whereas a lactating sow nursing 11 piglets should be fed ad libitum?

a. Lactating sows have smaller stomach capacities and digest feed more slowly than pregnant sows
b. Restricted feeding during lactation increases milk fat percentage and prevents mastitis
c. Overfeeding during early gestation raises embryonic mortality and causes obesity leading to farrowing difficulties, whereas high intake during lactation supports heavy milk yield and limits body weight loss
d. Pregnant sows cannot metabolize dietary starch until after farrowing

23. A sow displays a swollen vulva and stands rigidly immobile with erect ears when the herdsman applies firm pressure to her back in front of a teaser boar. What is the optimal timing for double artificial insemination?

AGRICULTURE REVIEW
AGRICULTUREREVIEW.COM

a. First insemination roughly 12 hours after onset of standing heat, followed by a second insemination 12 hours later to match ovulation
b. Single insemination 48 hours after standing heat has completely ended
c. First insemination three days before standing heat begins, followed by a second dose seven days later
d. Two consecutive inseminations spaced five minutes apart before standing heat appears

24. A swine producer places a highly digestible, milk-based pre-starter mash in a protected creep area starting at 7 to 10 days of age while piglets are still nursing. How does creep feeding benefit post-weaning growth?

a. Replaces the need for colostrum intake during the first 24 hours after birth
b. Stops the sow from producing milk so piglets wean themselves at 12 days
c. Eliminates the need for clean drinking water in the nursery pen
d. Acclimates piglets to solid feed and stimulates digestive enzyme maturation, minimizing post-weaning diarrhea and growth check

25. Male piglets destined for commercial slaughter at 95 kilograms live weight are castrated between 7 and 14 days of age to be raised as barrows. What major pork quality defect does early castration eliminate?

a. Pale, soft, and exudative muscle caused by excess dietary lysine
b. Boar taint, an unpleasant odor and flavor in cooked pork caused by androstenone and skatole in intact mature males
c. Trichinosis cysts embedded in skeletal muscle fibers
d. Excessive intramuscular marbling in the pork loin

26. Inside a farrowing building, nursing sows perform best at a cool ambient temperature of 18 to 22 degrees Celsius, whereas newborn piglets require 30 to 32 degrees Celsius to prevent chilling and hypoglycemia. How do modern farrowing facilities satisfy both requirements simultaneously?

a. Heat the entire farrowing room to 32 degrees Celsius and mist the piglets with cold water
b. Keep the entire room at 18 degrees Celsius without any supplemental heat source
c. Maintain a cool general room temperature for the sows while providing a localized heated creep box with a heat lamp or heating pad for the piglets
d. Move newborn piglets into an outdoor nursery shed immediately after birth

27. A backyard pig raiser feeds uncooked restaurant kitchen scraps containing pork trimmings to growing hogs and allows livestock buyers' trucks to park right next to the pig pens. Which catastrophic viral disease risk is sharply heightened by these lapses?

a. African swine fever, which persists in untreated pork products and spreads easily via swill feeding and contaminated transport vehicles
b. Bovine spongiform encephalopathy transmitted by cereal grains
c. Avian infectious bronchitis spread through hog drinking nipples
d. Rinderpest transmitted through concrete slatted floors

AGRICULTURE REVIEW

28. A 50-sow breeding farm records an average of 114 days gestation, 28 days lactation, and 7 days weaning-to-conception interval per cycle. Excluding non-productive culling days, approximately how many litters per sow per year does this herd achieve?

a. 1.85 litters
b. 2.10 litters
c. 2.95 litters
d. 2.45 litters

29. A commercial piggery replaces a single grower-finisher feed used from 25 to 100 kilograms with a four-phase feeding program that progressively reduces crude protein and lysine as hogs approach market weight. How does phase feeding improve both economics and waste management?

a. Increases daily nitrogen excretion so manure becomes richer in ammonia gas
b. Matches declining amino acid needs for lean accretion, lowering feed cost per kilogram of gain and cutting excess nitrogen output in manure
c. Eliminates the need for dietary energy ingredients during the finishing stage
d. Doubles subcutaneous backfat thickness to improve carcass grading

30. A 200-sow farrow-to-finish farm constructs a covered anaerobic lagoon biodigester to process daily hog washings and manure slurry. What combined operational advantage does this waste utilization system provide?

a. Converts hog manure directly into sterile drinking water for newborn piglets
b. Eliminates all solid sludge so the lagoon never requires maintenance
c. Reduces foul odor and organic pollution load while capturing methane biogas for farm electricity or farrowing heat lamps
d. Increases greenhouse gas release to warm open-sided finishing pens

31. A beef rancher in Bukidnon plans to upgrade native Philippine cows to produce heat-tolerant, tick-resistant beef calves capable of thriving on tropical pastures. Which Bos indicus beef breed is best suited as the sire breed?

a. American Brahman
b. Hereford
c. Aberdeen Angus
d. Charolais

32. A dairy cooperative evaluates Holstein Friesian and Jersey cows for a tropical highland dairy enterprise. While Holstein Friesians lead in total milk volume, for what specific compositional advantage is the Jersey breed especially valued?

a. Lowest butterfat percentage among all temperate dairy cattle breeds
b. Highest adult body weight exceeding 900 kilograms for salvage beef value
c. Complete immunity to bovine mastitis and foot-and-mouth disease
d. Higher butterfat and protein percentages in milk, paired with smaller body size and better heat tolerance

33. National buffalo upgrading programs cross native Philippine swamp carabaos with riverine buffaloes such as the Bulgarian Murrah. What primary productivity gain does this crossbreeding strategy target?

a. Converting riverine buffaloes into dwarf draft animals with lower feed intake

b. Substantially higher daily milk yield, longer lactation duration, and faster calf growth while retaining tropical adaptability

c. Eliminating the need for green roughage in adult buffalo rations

d. Shortening buffalo gestation length from 315 days to 200 days

34. A commercial goat producer intends to focus on fast-growing, heavily muscled slaughter kids for chevon production rather than fluid milk sales. Which meat-type goat breed of South African origin characterized by a white body and reddish-brown head should be selected?

a. Saanen

b. Toggenburg

c. Boer

d. Alpine

35. Why are hair sheep breeds such as Dorper, Katahdin, and Barbados Blackbelly favored over temperate wool breeds for tropical mutton production in the Philippines?

a. They shed their light hair coats naturally, exhibit greater heat tolerance and parasite resilience, and breed year-round without requiring shearing

b. They produce high-grade Merino fleece that commands premium export prices

c. They require sub-zero winter temperatures to initiate estrus cycling

d. They subsist exclusively on meat-and-bone meal rather than pasture grasses

36. A dairy calf born at 2:00 in the morning must consume high-quality colostrum equal to roughly 10 percent of its body weight within the first six hours of life. Why is feeding colostrum within this early window so critical?

a. Colostrum turns toxic inside the cow's udder seven hours after calving

b. Newborn calves cannot swallow liquid milk after 12 hours of age

c. Early colostrum intake permanently eliminates the need for roughage after weaning

d. Intestinal absorption of intact maternal immunoglobulins declines rapidly after birth and closes within about 24 hours, making early intake vital for passive immunity

37. A high-yielding crossbred dairy cow is dried off 60 days prior to her expected calving date and gradually transitioned onto increasing concentrate levels during the final three weeks before calving. What dual purpose do the dry period and late-gestation steaming up accomplish?

a. Trigger rapid weight loss so the cow produces skim milk after calving

b. Allow mammary secretory tissue to regenerate while adapting rumen microbes and papillae to higher-energy lactation feeds and supporting rapid fetal growth

c. Prevent colostrum synthesis so regular white milk can be sold on day one

d. Extend gestation length by three weeks to produce heavier bull calves

38. On hot sunny afternoons, carabaos tethered in open treeless fields pant heavily and stop grazing much sooner than Brahman cattle under the same conditions. Which anatomical trait makes shade or wallowing facilities essential for carabaos?

a. Carabaos lack a functional rumen to dissipate fermentation heat
b. Carabaos have twice as many sweat glands per square centimeter as cattle
c. Carabaos have far fewer functional sweat glands and dark, thick skin that absorbs solar heat, limiting evaporative cooling through sweating
d. Carabaos maintain a normal body temperature five degrees higher than cattle

39. Goat farmers in humid regions consistently record lower losses from pneumonia and gastrointestinal worms when raising goats on elevated slatted floors rather than directly on earthen ground. Why does elevated slatted housing improve herd productivity?

a. Manure and urine fall through the slats away from the animals, keeping bedding dry and breaking the oral reinfection cycle of internal parasites such as Haemonchus contortus
b. Elevated floors eliminate the need to provide clean drinking water to confined goats
c. Goats cannot digest Napier grass unless standing one meter above the ground
d. Slatted floors automatically trim hooves to zero length and prevent estrus

40. A beef cattle manager schedules disbudding and castration of non-breeding male calves during the first two months of life rather than waiting until weaning at eight months. What management benefit does early execution offer?

a. Causes heavier bleeding that accelerates muscle marbling
b. Eliminates the need for colostrum and vaccinations during the suckling stage
c. Produces intact bulls with larger horns for feedlot finishing
d. Minimizes physical stress, hemorrhage, and growth setbacks while ensuring safer handling and uniform steer carcasses

41. A 350-kilogram feedlot steer is expected to consume dry matter at 3.0 percent of its body weight daily. How many kilograms of total dry matter must the daily ration supply to this steer?

a. 7.5 kilograms
b. 10.5 kilograms
c. 14.0 kilograms
d. 9.0 kilograms

42. During the dry season when green forage is scarce, smallholder cattle raisers spray chopped rice straw with a 4 percent urea solution and seal it airtight under plastic sheets for two to three weeks before feeding. How does urea treatment improve the nutritive value of rice straw?

a. Converts lignin completely into soluble sucrose and vegetable oil
b. Eliminates all dietary fiber so rice straw functions like yellow corn
c. Released ammonia swells and weakens lignocellulose bonds while supplying non-protein nitrogen, improving both digestibility and voluntary intake
d. Sterilizes the rumen so microbial fermentation ceases completely

43. A cattle ranch subdivides its 40-hectare Guinea grass pasture into eight paddocks and moves the herd every five days, giving each paddock 35 days of rest before regrazing. How does this rotational grazing system outperform continuous grazing?

a. Prevents selective overgrazing of palatable grasses, allows forage root reserves to recover for higher yield, and reduces pasture parasite larvae burdens
b. Eliminates the need for fencing and watering troughs across the ranch
c. Forces cattle to eat woody weeds exclusively while leaving grass untouched
d. Doubles the daily walking distance of cattle to burn off excess backfat

44. A tropical pasture produces 12,000 kilograms of usable forage dry matter per hectare per year, while one animal unit requires 3,650 kilograms of forage dry matter annually. What is the predictable outcome if a rancher stocks 5 animal units per hectare without supplemental feed?

a. Forage biomass accumulates in excess and requires mechanical mowing every month
b. Individual steer daily weight gains double due to tighter grazing competition
c. Pasture carrying capacity automatically rises to match herd size
d. Severe overgrazing ensues, depleting desirable grasses, triggering weed invasion and soil erosion, and depressing animal weight gain and fertility

45. A smallholder dairy goat farmer with only half a hectare of intensive Napier grass and Indigofera plots adopts a complete confinement cut-and-carry system instead of open tethering. What major productivity advantage does zero grazing provide under tight land availability?

a. Eliminates all labor costs associated with forage harvesting and feeding
b. Maximizes forage utilization without trampling losses, conserves animal energy spent walking, and enables controlled feeding and parasite management
c. Allows goats to select wild pasture herbs freely across neighboring farms
d. Removes the need for mineral blocks and clean water troughs

46. A beef cattle ranch applies prostaglandin F2-alpha protocols to synchronize estrus across 40 cycling cows prior to timed artificial insemination. What primary operational advantage does estrus synchronization deliver?

a. Increases twin birth rates to 100 percent across the entire cow herd
b. Eliminates the need for post-calving nutrition and calf vaccinations
c. Concentrates breeding and subsequent calving into a tight window, producing uniform calf crops for streamlined management and group marketing
d. Allows infertile cows with blocked oviducts to conceive naturally

47. A commercial dairy farm experiences rising milk somatic cell counts and recurring clinical mastitis in lactating cows. Which milking hygiene routine best controls the spread of contagious mastitis pathogens such as Staphylococcus aureus?

a. Pre-dip and dry teats with individual clean towels, inspect foremilk on a strip cup, milk infected cows last, and apply post-milking antiseptic teat dip immediately
b. Wash all cows' udders with a single shared sponge dipped in plain cold water and skip teat dipping
c. Milk infected cows first every morning to clear bacteria out of the milking clusters
d. Leave milking cups attached for five extra minutes after milk flow stops

48. A goat flock grazing damp pastures suffers pale conjunctival membranes, soft swelling beneath the lower jaw, and severe weight loss despite routine monthly deworming of the entire herd with the same benzimidazole drug. What management error explains this ongoing outbreak?

a. Goats are immune to gastrointestinal nematodes after six months of age
b. Benzimidazole dewormers cause acute iron deficiency when given during wet weather
c. Monthly deworming removes beneficial rumen bacteria that digest dietary grass
d. Frequent blanket use of a single anthelmintic class selected for drug-resistant Haemonchus contortus populations, requiring targeted selective treatment and drug rotation

49. Hungry beef cattle released onto a lush, dew-wet young legume pasture rapidly develop severe distension of the left flank, labored breathing, and frothy ruminal bloat. Which pre-grazing management measure prevents this acute condition?

a. Withhold dry hay for 24 hours prior to turning cattle onto wet legumes
b. Feed dry grass hay before turnout, avoid grazing wet immature legumes with hungry cattle, and maintain a balanced grass-legume sward or supply anti-foaming agents
c. Drench cattle with high levels of molasses immediately before legume grazing
d. Restrict drinking water for two days before pasture entry

50. A semi-commercial beef feedlot collects cattle manure and soiled bedding, composts the mixture aerobically, and applies it to its adjacent 5-hectare forage and corn fields prior to planting. How does this crop-livestock waste integration improve farm sustainability?

a. Increases nitrogen leaching into nearby streams while sterilizing topsoil microbes
b. Eliminates the need for sunlight and irrigation in tropical forage production
c. Recycles organic matter, nitrogen, phosphorus, and potassium back into forage soils, lowering synthetic fertilizer costs and curbing environmental runoff
d. Converts beef cattle manure directly into high-protein calf milk replacer

Part II. Detailed Answer Key and Technical Rationales

Review the verified answers and physiological or management explanations below for all 50 examination items in Module F (Animal Production and Management).

Item	Ans	Correct Option and Detailed Technical Rationale
1	b	**Single Comb White Leghorn.** Originating in Italy (Mediterranean class), the Single Comb White Leghorn possesses a compact body frame, non-broody temperament, exceptional feed-to-egg conversion efficiency, and high annual output of white-shelled eggs, making it the global commercial standard for white table egg enterprises.
2	c	**Philippine Mallard duck or Khaki Campbell because they are prolific egg-type breeds with high laying persistency.** The Philippine Mallard (Itik) and Khaki Campbell are light-bodied, high-laying duck breeds bred specifically for sustained egg production used in balut, penoy, and salted egg processing, whereas Muscovy, Pekin, and Rouen are heavy meat-type breeds.
3	a	**Increase brooder heat output and eliminate cold drafts because the chicks are chilled.** Newly hatched chicks lack full thermoregulatory control; huddling tightly beneath the heat source accompanied by loud distress chirping is the classic behavioral sign of chilling and draft exposure.
4	d	**Decrease crude protein percentage while increasing metabolizable energy concentration to support shifting tissue accretion and maintenance needs.** Young starter chicks have a high rate of lean muscle and skeletal synthesis requiring higher dietary protein (around 21 to 23 percent), whereas older finisher broilers require lower protein (around 18 to 19 percent) and higher energy density to support heavier maintenance requirements and finishing carcass deposition.
5	b	**Feeding high calcium too early can cause kidney damage and visceral gout, whereas raising it just before lay builds medullary bone reserves for eggshell formation.** Excess dietary calcium prior to sexual maturity overloads immature renal tubules, causing urolithiasis and visceral gout; increasing calcium around 17 to 18 weeks primes estrogen-mediated medullary bone storage needed for daily eggshell calcification.
6	c	**Premature sexual maturity, yielding small-bodied pullets that lay undersized eggs and experience higher incidence of vent prolapse.** Increasing photoperiod during the late grower phase prematurely stimulates the hypothalamic-pituitary-gonadal axis before the pullet's skeletal frame and reproductive tract are fully grown, causing early lay of small eggs and oviductal prolapse.
7	a	**Never decrease daylength during the laying period because declining photoperiod suppresses reproductive hormone secretion and triggers molt.** Adult laying hens interpret shortening daylength as an autumnal cue, downregulating gonadotropin-releasing hormone, luteinizing hormone, and follicle-stimulating hormone, which halts ovulation and induces feather molting.
8	d	**82.0 percent.** Hen-day egg production percentage equals (Total eggs gathered divided by Number of live hens present on that day) multiplied by 100. Dividing 2,050 eggs by 2,500 hens equals 0.82, or 82.0 percent.
9	b	**Cull the bird immediately because these physical indicators show she is out of production and wasting feed.** In yellow-skinned breeds, xanthophyll pigment bleaches sequentially from the vent, eye ring, earlobe, beak, and shanks during sustained egg laying; deep yellow shanks paired with a shriveled pale comb and tight, rigid pubic bones confirm a non-laying bird.

Item	Ans	Correct Option and Detailed Technical Rationale
10	c	**Provide supplemental balanced concentrate mash or scratch grains fortified with protein and calcium alongside clean water.** Scavenging native chickens depend on seasonal insects, worms, and tender herbage; dry-season scarcity creates protein, energy, and calcium deficits that must be bridged with balanced supplementation to sustain growth and egg laying.
11	a	**To curb feather pecking, vent cannibalism, and selective feed wastage while preserving normal eating and drinking.** Precision beak trimming blunts the sharp tip of the upper and lower mandibles during the growing phase, reducing injurious pecking mortality and preventing birds from flicking feed particles out of troughs.
12	d	**Evaporative cooling pads and high-velocity exhaust fans remove excess heat and ammonia, preventing heat stress and sustaining feed intake.** High longitudinal air speed creates a wind-chill cooling effect over the birds while evaporative pads lower incoming air temperature, preventing hyperthermia, mortality, and appetite suppression during hot tropical months.
13	b	**Housing a single age group per building permits thorough cleaning, disinfection, and pathogen die-off, breaking disease cycling between batches.** Multi-age sites continuously transmit pathogens from older carrier flocks to newly placed chicks; all-in all-out scheduling allows complete depopulation, washing, sanitization, and downtime to interrupt infectious cycles.
14	c	**High early embryonic mortality because the developing embryo adheres to the inner shell membrane.** Regular hourly egg turning during the first two weeks of incubation keeps the embryo centered in the albumen, facilitates nutrient and gas exchange across the chorioallantoic membrane, and prevents fatal adhesion to the shell membranes.
15	a	**Prevent waterer leaks to keep manure dry, maintain pit ventilation, and compost the poultry litter aerobically so heat destroys fly larvae and weed seeds.** Houseflies require moist organic media (above 50 percent moisture) to lay eggs and develop larvae; keeping manure dry below 30 percent moisture and thermophilic aerobic composting above 55 degrees Celsius eliminates fly breeding and stabilizes nutrients.
16	d	**Landrace and Large White.** Crossing Landrace and Large White (Yorkshire) combines superior maternal traits—prolificacy, milk yield, gentle temperament, and strong mothering ability—producing vigorous F1 replacement gilts for commercial three-way terminal crossbreeding systems.
17	b	**Duroc or Pietrain.** Duroc (noted for rapid daily gain, robustness, and intramuscular marbling) and Pietrain (noted for extreme carcass leanness and heavy loin and ham muscling) serve as premier terminal sire lines over Landrace-Large White maternal sows.
18	c	**June 23.** Counting 114 days forward from March 1: 30 remaining days in March (30), plus 30 days in April (60), plus 31 days in May (91), leaving 23 days into June, which places the expected farrowing date on June 23.
19	a	**Piglets are born with limited iron reserves, sow's milk is naturally low in iron, and concrete floors prevent rooting in soil, causing nutritional anemia.** Fast-growing neonatal piglets deplete their small hepatic iron stores within days while sow's milk supplies only about 1 milligram of iron daily against a 7-milligram requirement, making parenteral iron dextran essential in confinement systems.

Item	Ans	Correct Option and Detailed Technical Rationale
20	d	**Udder lacerations that cause the sow to refuse nursing, as well as facial wounds among competing littermates.** Piglets are born with eight sharp deciduous needle (wolf) teeth; blunting the tips shortly after birth prevents painful teat injuries that trigger sow agitation and mastitis, as well as necrotic facial lesions among piglets.
21	b	**Stimulating a higher ovulation rate to increase potential litter size at farrowing.** Increasing energy and nutrient intake for 10 to 14 days prior to breeding elevates insulin and insulin-like growth factor-1 concentrations, enhancing ovarian follicular recruitment and ovulation rate in replacement gilts.
22	c	**Overfeeding during early gestation raises embryonic mortality and causes obesity leading to farrowing difficulties, whereas high intake during lactation supports heavy milk yield and limits body weight loss.** High energy intake in early pregnancy accelerates hepatic progesterone clearance, lowering embryo survival, while ad libitum feeding during lactation fuels heavy milk synthesis and preserves subsequent reproductive fertility.
23	a	**First insemination roughly 12 hours after onset of standing heat, followed by a second insemination 12 hours later to match ovulation.** Sows typically ovulate about two-thirds of the way through standing estrus (roughly 30 to 40 hours after onset); double artificial insemination at 12-hour intervals ensures viable, capacitated spermatozoa are present at the fertilization site when ova are released.
24	d	**Acclimates piglets to solid feed and stimulates digestive enzyme maturation, minimizing post-weaning diarrhea and growth check.** Offering palatable pre-starter feed during nursing induces pancreatic amylase, protease, and maltase activity and adapts gut villi to plant-based nutrients, easing the abrupt transition away from sow's milk at weaning.
25	b	**Boar taint, an unpleasant odor and flavor in cooked pork caused by androstenone and skatole in intact mature males.** Testicular steroid androstenone and microbial tryptophan metabolite skatole accumulate in the adipose tissue of intact boars approaching puberty, emitting an offensive urine- or fecal-like odor upon heating; early castration eliminates testicular androgen production.
26	c	**Maintain a cool general room temperature for the sows while providing a localized heated creep box with a heat lamp or heating pad for the piglets.** Dual-zone microclimate management prevents heat stress and appetite depression in lactating sows while keeping newborn piglets within their thermoneutral zone to prevent hypothermia and crushing.
27	a	**African swine fever, which persists in untreated pork products and spreads easily via swill feeding and contaminated transport vehicles.** African swine fever virus is highly resilient in chilled, frozen, or cured pork scraps and on fomites; strict biosecurity prohibits feeding untreated swill and enforces vehicle disinfection away from animal housing.
28	d	**2.45 litters.** Total reproductive cycle length equals 114 days gestation plus 28 days lactation plus 7 days weaning-to-conception interval, totaling 149 days per litter. Dividing 365 days per year by 149 days per cycle yields 2.45 litters per sow per year.
29	b	**Matches declining amino acid needs for lean accretion, lowering feed cost per kilogram of gain and cutting excess nitrogen output in manure.** As growing pigs mature, muscle protein deposition plateaus relative to lipid deposition; tailoring dietary crude protein and crystalline amino acids across multiple phases prevents expensive protein wastage and reduces urinary urea nitrogen excretion.

Item	Ans	Correct Option and Detailed Technical Rationale
30	c	**Reduces foul odor and organic pollution load while capturing methane biogas for farm electricity or farrowing heat lamps.** Anaerobic digestion degrades volatile organic solids, substantially lowers biological oxygen demand and noxious odors, and harvests combustible methane gas as renewable on-farm energy.
31	a	**American Brahman.** As a Bos indicus zebu breed, the American Brahman possesses loose skin, abundant sweat glands, a short glossy coat, and natural resistance to ticks and tropical heat, making it ideal for upgrading native cattle under Philippine ranch conditions compared to Bos taurus breeds (Hereford, Angus, Charolais).
32	d	**Higher butterfat and protein percentages in milk, paired with smaller body size and better heat tolerance.** Although Holstein Friesians produce the highest total fluid volume, Jersey cows yield milk richest in butterfat (often 4.8 to 5.2 percent) and protein while exhibiting superior heat tolerance and lower maintenance feed requirements.
33	b	**Substantially higher daily milk yield, longer lactation duration, and faster calf growth while retaining tropical adaptability.** Native swamp carabaos are primarily draft-type animals producing only 1.5 to 2.0 liters of milk daily, whereas riverine dairy buffaloes such as Bulgarian Murrah produce 8 to 12 liters daily, dramatically boosting dairy and meat output in crossbred progeny.
34	c	**Boer.** Developed in South Africa specifically for meat production, the Boer goat is distinguished by its white body, reddish-brown head with pendulous ears, rapid average daily gain, heavy muscling, and high dressing percentage, whereas Saanen, Toggenburg, and Alpine are specialized dairy breeds.
35	a	**They shed their light hair coats naturally, exhibit greater heat tolerance and parasite resilience, and breed year-round without requiring shearing.** Unlike temperate wool breeds that suffer severe heat stress, fleece rot, and shearing costs in humid tropics, hair sheep thrive on tropical pastures without wool-shearing labor.
36	d	**Intestinal absorption of intact maternal immunoglobulins declines rapidly after birth and closes within about 24 hours, making early intake vital for passive immunity.** Because ruminant epitheliochorial placentation blocks maternal antibody transfer in utero, calves depend entirely on early pinocytotic absorption of colostral IgG before gut closure occurs within the first day of life.
37	b	**Allow mammary secretory tissue to regenerate while adapting rumen microbes and papillae to higher-energy lactation feeds and supporting rapid fetal growth.** A 45-to-60-day dry period enables involution and renewal of milk-secreting alveoli, while gradual close-up concentrate feeding elongates ruminal papillae to absorb volatile fatty acids efficiently after calving.
38	c	**Carabaos have far fewer functional sweat glands and dark, thick skin that absorbs solar heat, limiting evaporative cooling through sweating.** Water buffaloes possess roughly one-sixth the sweat gland density of Bos indicus cattle and dark melanin-rich skin, relying heavily on wallowing in mud or water and seeking shade to dissipate body heat.

Item	Ans	Correct Option and Detailed Technical Rationale
39	a	**Manure and urine fall through the slats away from the animals, keeping bedding dry and breaking the oral reinfection cycle of internal parasites such as Haemonchus contortus.** Elevating goats on slatted flooring isolates them from fecal-contaminated ground where infective third-stage strongyle larvae develop, while preventing dampness and ammonia buildup linked to respiratory disease.
40	d	**Minimizes physical stress, hemorrhage, and growth setbacks while ensuring safer handling and uniform steer carcasses.** Performing disbudding and castration while calves are young and light minimizes tissue trauma, blood loss, infection risk, and post-procedure weight check compared to operating on heavy weaned animals.
41	b	**10.5 kilograms.** Daily dry matter intake equals body weight multiplied by the dry matter intake percentage: 350 kilograms multiplied by 0.030 (3.0 percent) equals 10.5 kilograms of total dry matter per day.
42	c	**Released ammonia swells and weakens lignocellulose bonds while supplying non-protein nitrogen, improving both digestibility and voluntary intake.** Moisture and endogenous urease hydrolyze urea into ammonia during airtight incubation, saponifying ester linkages between lignin and hemicellulose so rumen cellulolytic microbes ferment the straw faster and supply microbial protein.
43	a	**Prevents selective overgrazing of palatable grasses, allows forage root reserves to recover for higher yield, and reduces pasture parasite larvae burdens.** Short grazing periods followed by adequate rest let tropical grasses replenish non-structural carbohydrate reserves in roots and crown while exposing infective parasite larvae to desiccation before animals return.
44	d	**Severe overgrazing ensues, depleting desirable grasses, triggering weed invasion and soil erosion, and depressing animal weight gain and fertility.** Pasture carrying capacity is 12,000 kilograms divided by 3,650 kilograms, or approximately 3.29 animal units per hectare; stocking 5 animal units per hectare exceeds forage supply by over 50 percent, causing pasture degradation and animal undernutrition.
45	b	**Maximizes forage utilization without trampling losses, conserves animal energy spent walking, and enables controlled feeding and parasite management.** Under limited land area, cut-and-carry zero grazing harvests maximum biomass per hectare, eliminates fouling and trampling of high-yielding fodder plots, and shields goats from soil-borne gastrointestinal parasites.
46	c	**Concentrates breeding and subsequent calving into a tight window, producing uniform calf crops for streamlined management and group marketing.** Prostaglandin F2-alpha induces luteolysis of a responsive corpus luteum, synchronizing estrus so cows can be bred via artificial insemination in a compressed schedule, yielding uniform calves for batch vaccination, weaning, and sale.
47	a	**Pre-dip and dry teats with individual clean towels, inspect foremilk on a strip cup, milk infected cows last, and apply post-milking antiseptic teat dip immediately.** Contagious mastitis pathogens like Staphylococcus aureus spread primarily from infected quarters to healthy quarters during milking via shared cloths, hands, or teat cup liners; strict milking order, single-use towels, and post-milking teat dipping break transmission.

Item	Ans	Correct Option and Detailed Technical Rationale
48	d	**Frequent blanket use of a single anthelmintic class selected for drug-resistant Haemonchus contortus populations, requiring targeted selective treatment and drug rotation.** Bottle jaw (submandibular edema) and pale ocular mucous membranes (anemia) indicate severe haemonchosis; treating every animal monthly with one chemical class eliminates susceptible worms and leaves an entirely resistant worm population.
49	b	**Feed dry grass hay before turnout, avoid grazing wet immature legumes with hungry cattle, and maintain a balanced grass-legume sward or supply anti-foaming agents.** Rapid ingestion of lush, low-fiber legumes releases soluble leaf proteins that trap rumen fermentation gases into a stable froth; pre-feeding dry roughage stimulates salivation and slows rapid legume intake.
50	c	**Recycles organic matter, nitrogen, phosphorus, and potassium back into forage soils, lowering synthetic fertilizer costs and curbing environmental runoff.** Aerobic composting stabilizes manure nutrients into slow-release organic fertilizer, enriches soil water-holding capacity and microbial health, reduces synthetic fertilizer expenses, and closes the nutrient loop on integrated crop-livestock farms.

AGRICULTURE REVIEW
AGRICULTUREREVIEW.COM