TABLE OF SPECIFICATIONS (TOS) PRACTICE SERIES

Animal Science Reviewer Based On TOS (Module A: Introduction) By Agriculture Review

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Part I. Practice Examination Questions (Items 1–50)

1. In a traditional lowland rice-carabao farming system in the Philippines, which ecological function of the water buffalo directly reduces the farm's reliance on synthetic inorganic fertilizers?

a. Converting fibrous crop residues into organic manure that recycles nitrogen and phosphorus back into the paddy soil

b. Fixing atmospheric nitrogen directly through symbiotic bacteria present in its hoof tissues

c. Increasing soil pH by excreting alkaline urine across flooded rice paddies

d. Eliminating all soil-borne fungal pathogens through continuous trampling of rice stubble

2. Archeological evidence shows that the domestication of sheep and goats in the Fertile Crescent preceded that of large draft cattle primarily because early human societies needed animals that could:

a. Pull heavy iron plows across deep alluvial plains

b. Adapt easily to nomadic herding while utilizing sparse, low-quality forage

c. Produce high volumes of commercial fluid milk for urban trade

d. Survive exclusively on harvested cereal grains stored in granaries

3. Why did the domestication of the Red Junglefowl in Southeast Asia become pivotal to the early spread of integrated smallholder agriculture across the Asia-Pacific region?

a. It required intensive grain-based confinement housing that encouraged permanent city building

b. It was easily transported during human migrations and thrived as a scavenger converting household scraps and insects into protein

c. It served as the primary source of draft power for clearing tropical rainforests

d. It replaced ruminants as the sole source of organic fertilizer in upland slash-and-burn farms

4. When ruminants graze on marginal upland grasslands unsuitable for arable cropping, how do they contribute to human food security within the broader agroecosystem?

a. By competing directly with humans for high-starch cereal grains and legumes

b. By converting indigestible cellulosic biomass into nutrient-dense meat and milk

c. By accelerating topsoil erosion to expose mineral-rich subsoil layers

d. By eliminating native grass species so that monoculture crops can establish naturally

5. Which biological characteristic of wild boars made them particularly amenable to early domestication near Neolithic human settlements?

a. Their strict obligate herbivory that allowed them to digest woody tree bark
b. Their omnivorous feeding habits, rapid reproductive rate, and ability to utilize food waste
c. Their solitary territorial behavior that prevented them from mingling with human camps
d. Their seasonal migration patterns across arid desert landscapes

6. In an integrated crop-livestock-fish farming model, placing poultry houses directly above fishponds primarily demonstrates which ecological principle?

a. Competitive exclusion between terrestrial and aquatic vertebrates
b. Cascading nutrient cycling where animal waste fertilizes phytoplankton growth for fish
c. Monoculture intensification to maximize single-species biomass output
d. Elimination of biological oxygen demand in stagnant water bodies

7. How did the domestication of the horse and ox fundamentally alter the trajectory of ancient crop production systems?

a. It reduced the total cultivated land area by replacing grain fields with permanent pastures
b. It multiplied human labor capacity through animal traction, enabling deeper tillage and larger harvest surpluses
c. It ended the need for irrigation canals in river valley civilizations
d. It eliminated the practice of fallowing agricultural land between planting seasons

8. Among the following behavioral traits, which one was most critical for wild ungulates to successfully undergo domestication by early agriculturalists?

a. Extreme flight distance and high reactivity to human presence
b. Strict monogamous pairing during a narrow annual breeding window
c. Social hierarchy with a tendency to follow a dominant leader in herds
d. Dependence on specialized single-plant diets found only in alpine zones

9. In tropical Philippine agroecosystems, why do native goats often outperform temperate dairy cattle on unimproved hillside pastures?

a. Native goats possess superior heat tolerance and selective browsing ability on woody shrubs and weeds
b. Native goats require higher daily volumes of drinking water and shaded cooling barns
c. Temperate dairy cattle cannot digest any tropical grass species regardless of maturity
d. Native goats have a slower metabolic rate that eliminates the need for dietary minerals

10. Historically, why were dogs domesticated significantly earlier than food-producing livestock such as cattle, swine, and chickens?

a. Dogs were needed to pull plows before cereal agriculture emerged
b. Wolves gravitated toward hunter-gatherer camps for food scraps and provided mutual benefits in hunting and guarding
c. Early humans kept dogs primarily for commercial wool and hide production
d. Dogs were the only wild mammals capable of reproducing in captivity during the Ice Age

11. A farmer integrates native ducks into a post-harvest rice paddy system. Beyond producing eggs, what ecological service do the ducks perform for the next cropping cycle?

a. They compact the soil to prevent water percolation during the dry season

b. They consume fallen rice grains, weeds, and golden apple snails, reducing pest pressure

c. They increase methane emissions by stirring deep anaerobic mud layers

d. They deposit heavy metals that suppress aquatic weed germination

12. Why does the ecological niche of monogastric farm animals like swine and poultry differ fundamentally from that of ruminants in modern intensive agriculture?

a. Monogastrics rely primarily on high-energy concentrates and grains, creating direct feed-food competition with humans

b. Monogastrics ferment cellulose in a four-chambered stomach to synthesize microbial protein

c. Ruminants cannot survive without fishmeal and synthetic amino acid supplements

d. Monogastrics are exclusively raised on non-arable rangelands where crops cannot grow

13. During the Spanish colonial period in the Philippines, which historical development significantly influenced the genetic makeup and utility of local livestock?

a. The introduction of European and Mexican cattle, horses, and swine breeds via the galleon trade

b. The complete replacement of swamp carabaos with temperate Holstein Friesian dairy herds

c. The prohibition of backyard poultry keeping across all lowland barangays

d. The establishment of automated commercial broiler complexes in Mindanao

14. For a smallholder upland farmer in the Philippines without access to formal rural banks, keeping two or three head of cattle or goats primarily serves which economic function?

a. A fixed depreciating asset that cannot be liquidated during emergencies

b. A 'living bank' or capital reserve that can be converted into cash for tuition, medical needs, or crop inputs

c. A guaranteed hedge against international foreign exchange fluctuations

d. A tax shelter used to offset corporate agricultural income

15. Which factor best explains why animal-source foods hold higher economic value per kilogram than staple cereal crops in both domestic and international markets?

a. Animal products require less labor and capital investment per unit of output

b. Animal proteins provide complete essential amino acid profiles and bioavailable micronutrients such as heme iron and vitamin B12

c. Animal products have a naturally longer unrefrigerated shelf life than dried cereal grains

d. Governments prohibit the retail sale of cereals at prices above livestock products

16. In Philippine rice-producing areas where small plots and muddy terrain limit heavy four-wheel tractors, the carabao remains economically indispensable mainly because it provides:

a. High-speed mechanized harvesting across wide dryland estates

b. Renewable draft power for plowing, harrowing, and hauling at low cash operating cost

c. Fine wool fiber used in the domestic textile manufacturing industry

d. Rapid six-month market turnover comparable to commercial broilers

17. How does capturing biogas from swine manure in a commercial piggery improve the overall economic viability of the farm?

a. It eliminates the need for purchasing commercial starter feeds for weaned piglets

b. It lowers electricity and cooking fuel expenses while producing nutrient-rich bioslurry for crops

c. It doubles the liveweight gain of finisher hogs through atmospheric methane enrichment

d. It qualifies the farm for exemption from all environmental compliance regulations

18. When evaluating the economic contribution of the livestock and poultry subsectors to Philippine agriculture, why does poultry often recover faster from economic downturns than cattle production?

a. Poultry has a much shorter biological production cycle, higher feed conversion efficiency, and faster capital turnover

b. Poultry requires extensive grazing lands that are abundantly available in urban centers

c. Poultry meat is immune to consumer price sensitivity during periods of inflation

d. Cattle cannot be marketed in wet markets without prior export certification

19. Beyond meat, milk, and eggs, which group of animal by-products generates substantial secondary revenue for slaughterhouses and allied manufacturing industries?

a. Cellulose pulp, lignin, and natural latex

b. Hides, leather, bone meal, blood meal, gelatin, and pharmaceutical extracts

c. Synthetic polymers, urea crystals, and phosphate rock

d. Crude palm oil, copra meal, and rice bran

20. Why do smallholder coconut farmers frequently intergraze cattle or sheep beneath mature coconut palms?

a. Grazing animals increase coconut palm height by pruning the upper fronds

b. The animals control understorey weeds, lower brushing labor costs, fertilize the palms, and add a second income stream

c. Sheep and cattle prevent rhinoceros beetle infestations by climbing palm trunks

d. Intergrazing eliminates the need to harvest and process copra

21. Which economic advantage makes goat raising particularly attractive to rural women and landless agricultural households in developing countries?

a. High initial purchase cost that restricts competition from neighboring farms

b. Low capital requirement, small housing footprint, high prolificacy, and quick cash flow

c. Dependence on imported frozen semen for all routine breeding activities

d. Exclusive demand from high-end export hotels rather than local communities

22. In the Philippine culinary and cultural economy, the duck industry sustains a distinct value chain primarily because duck eggs are processed into:

a. Pasteurized infant formula and whey protein isolates

b. High-value traditional products such as balut, penoy, and salted red eggs

c. Industrial adhesives and biodegradable packaging films

d. Canned corned meat for international military rations

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23. How do farm animals contribute to rural employment stability compared to seasonal rainfed crop farming?

a. Livestock care requires daily year-round labor, smoothing household cash flow during non-harvest months

b. Livestock production only requires labor during a single two-week window each year

c. Animal husbandry replaces all crop-related jobs in rural municipalities

d. Farm animals eliminate the need for transport, milling, and retail workers

24. Which non-food utility of domesticated animals has made a major contribution to modern biomedical science and human medicine?

a. Using draft oxen to power rural hospital generators

b. Providing biological models, antibodies, heart valves, and therapeutic hormones for medical research and treatment

c. Supplying raw feathers for sterile surgical suturing

d. Replacing all clinical human trials with routine livestock feeding tests

25. A dairy carabao cooperative processes raw milk into kesong puti, pastillas, and flavored milk instead of selling raw milk directly to middlemen. What economic strategy is the cooperative applying?

a. Horizontal land consolidation

b. Value-adding to capture higher profit margins and extend product shelf life

c. Commodity dumping to reduce local market supply

d. Backward integration into synthetic feed manufacturing

26. When comparing the Philippine livestock inventory with global animal populations, which continent holds the largest share of the world's water buffalo population?

a. South America

b. Asia

c. Europe

d. North America

27. How does the global distribution of swine differ sharply from that of cattle and poultry?

a. Swine populations are heavily concentrated in East Asia, Europe, and the Americas, but are minimal in predominantly Muslim regions due to religious dietary laws

b. Swine are most abundant in arid Middle Eastern and North African deserts

c. Swine outnumber chickens globally by a ratio of ten to one

d. Swine production is legally restricted to island nations in Southeast Asia

28. Which major structural gap characterizes the Philippine dairy industry compared to major milk-exporting nations like New Zealand?

a. The Philippines produces a massive surplus of powdered milk that depresses local farmgate prices

b. Local milk production meets only a tiny fraction of national demand, leaving the country heavily dependent on dairy imports

c. Filipino consumers have zero dietary demand for milk and dairy products

d. New Zealand relies entirely on swamp carabaos for its commercial milk exports

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29. Why did the outbreak of African Swine Fever beginning in 2019 cause severe pork price inflation and supply shortages in the Philippines?

a. The virus caused near-total mortality in infected herds with no widely available commercial vaccine, forcing massive depopulation of both backyard and commercial farms

b. The disease infected human consumers directly, prompting a nationwide ban on eating all animal meat

c. It only affected imported frozen pork while leaving domestic live hogs completely unharmed

d. It increased the gestation period of sows from four months to twelve months

30. As average household incomes rise and urbanization accelerates in developing countries like the Philippines, how does the demand for animal products typically shift?

a. Consumers reduce meat and egg intake and switch exclusively to root crops

b. Per capita consumption of meat, eggs, and dairy rises significantly, driving demand for processed and convenience animal foods

c. Demand for poultry collapses in favor of wild game hunting

d. Animal product consumption remains permanently fixed regardless of purchasing power

31. Why are commercial swine and poultry producers in the Philippines highly vulnerable to international commodity price shocks?

a. Feed accounts for roughly 60 to 70 percent of production cost, and key ingredients like soybean meal, wheat, and corn substitutes are heavily imported

b. All broiler chicks and piglets must be air-freighted weekly from South America

c. Domestic meat prices are legally pegged to international crude oil futures

d. Philippine farms are prohibited from using locally grown yellow corn in animal rations

32. Which environmental concern is most closely associated with the rapid global expansion of intensive ruminant production?

a. Depletion of stratospheric ozone due to poultry feather decomposition

b. Enteric methane emissions contributing to greenhouse gas accumulation and pasture-driven deforestation

c. Increased volcanic activity near coastal grazing lowlands

d. Complete elimination of atmospheric carbon dioxide in temperate regions

33. When temporary tariff reductions and increased minimum access volume quotas are applied to imported pork during a domestic supply shortage, what trade-off do policymakers face?

a. Lower retail prices help urban consumers, but excessive imports can squeeze local raisers and discourage domestic herd repopulation

b. Imported pork automatically eliminates all transboundary livestock diseases in local farms

c. Domestic feed prices drop to zero while local farmgate prices double

d. Backyard farmers immediately transition into export-oriented beef ranching

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34. Why does heat stress pose an escalating production concern for commercial broilers, layers, and lactating sows in the Philippines?

a. High ambient temperature combined with high relative humidity depresses feed intake, slows growth, lowers egg production, and increases mortality

b. Tropical heat causes animals to overeat, leading to universal obesity in pasture cattle

c. High humidity converts dietary carbohydrates into toxic heavy metals inside the gut

d. Heat stress only affects cold-water fish and has no measurable impact on warm-blooded mammals

35. In global meat trade statistics, which meat species consistently records the fastest consumption growth worldwide due to its affordability, absence of major religious taboos, and low production footprint?

a. Horse meat

b. Poultry meat

c. Mutton

d. Veal

36. How does rapid peri-urban land conversion around Metro Manila, CALABARZON, and Central Luzon affect local livestock and poultry production?

a. It expands free communal grazing lands for beef cattle and carabaos

b. It forces farms to relocate farther from major consumer markets due to rising land values, zoning restrictions, and odor complaints from residential subdivisions

c. It reduces transport costs for live hogs by placing slaughterhouses inside residential condominiums

d. It eliminates the need for biosecurity barriers around poultry houses

37. Why has the indiscriminate sub-therapeutic use of antibiotics as growth promoters in intensive livestock farming become a critical global public health issue?

a. It accelerates the emergence of antimicrobial-resistant bacteria that can transfer from animals to humans through the food chain and environment

b. It makes cooked meat indigestible for adults over forty years old

c. It causes instant viral mutations in all crop plants grown nearby

d. It permanently removes essential amino acids from poultry eggs

38. Compared to major beef-exporting nations such as Brazil, Australia, and the United States, why does the Philippines struggle to achieve self-sufficiency in beef production?

a. Filipino consumers refuse to eat locally raised beef

b. Limited vast contiguous grazing land, small herd size, slow reproductive turnover of cattle, and high cost of fattening rations restrict domestic output

c. Cattle cannot reproduce in tropical climates with high rainfall

d. The government bans the slaughtering of male cattle nationwide

39. Based on Philippine livestock inventory profiles, which species has the highest proportion of its national population still held by smallholder or backyard raisers rather than large commercial ranches?

- **a.** Commercial broiler chickens
- **b.** Commercial laying hens
- **c.** Carabaos and goats
- **d.** Imported breeding turkeys

40. Which two regions in Luzon have historically accounted for the largest combined concentration of commercial swine and poultry populations in the Philippines?

- **a.** Cordillera Administrative Region and Caraga
- **b.** Central Luzon and CALABARZON
- **c.** MIMAROPA and Zamboanga Peninsula
- **d.** Bicol Region and Eastern Visayas

41. In the Philippine poultry sector, how do large commercial integrators primarily coordinate production with independent farm owners?

- **a.** Through contract growing arrangements where the integrator supplies day-old chicks, feeds, and technical supervision while the grower provides housing, utilities, and labor
- **b.** By leasing public rice paddies from municipal governments during the rainy season
- **c.** By allowing growers to set their own retail supermarket prices independently
- **d.** By donating free parent stock to households with no obligation to return grown birds

42. A municipality plans to upgrade the milk and meat genetics of its smallholder carabao herd through artificial insemination and dairy enterprise development. Which specialized government agency is mandated to lead this initiative?

- **a.** Philippine Rice Research Institute
- **b.** Philippine Carabao Center
- **c.** Bureau of Fisheries and Aquatic Resources
- **d.** Sugar Regulatory Administration

43. During a suspected transboundary outbreak of Avian Influenza in a commercial duck-raising province, which national agency is primarily responsible for animal disease surveillance, quarantine protocols, and movement restrictions?

- **a.** Bureau of Animal Industry
- **b.** National Food Authority
- **c.** Philippine Coconut Authority
- **d.** Fertilizer and Pesticide Authority

44. Which agency oversees the accreditation of slaughterhouses, poultry dressing plants, and meat inspection standards to ensure that meat sold to Filipino consumers is hygienic and safe?

- **a.** National Irrigation Administration
- **b.** National Meat Inspection Service
- **c.** Agricultural Training Institute
- **d.** Bureau of Plant Industry

45. Why are 'viajeros' or live-animal traders considered influential stakeholders in the traditional Philippine backyard livestock marketing chain?

a. They manufacture all commercial veterinary vaccines used in rural barangays

b. They aggregate small numbers of animals from dispersed backyard farms, shoulder transport logistics, and connect rural producers to urban auction markets and abattoirs

c. They issue official national livestock inventory reports every quarter

d. They regulate international meat import tariffs on behalf of the legislature

46. How does the Philippine Statistics Authority support policymakers, feed millers, and livestock investors across the animal industry?

a. By directly operating commercial piggery multipliers in every province

b. By publishing regular official inventory, volume of production, and farmgate price data by species and region

c. By issuing veterinary prescriptions for sick cattle and goats

d. By constructing cold storage warehouses for private meat importers

47. In comparing cattle and native chicken populations across the Philippines, why are regions such as Western Visayas, Central Visayas, and Northern Mindanao consistently prominent in native chicken inventory?

a. They have widespread rural households raising free-range native chickens for home consumption, local delicacies, and supplemental cash income

b. They prohibit the sale of commercial dressed broilers in public markets

c. They import live native chickens monthly from temperate European breeders

d. Native chickens in those regions are raised exclusively inside climate-controlled high-rise buildings

48. How does the relationship between feed millers and swine or poultry producers differ from their relationship with extensive backyard goat raisers?

a. Commercial swine and poultry farms depend almost entirely on formulated compound feeds from feed millers, whereas backyard goat raisers rely mostly on local forages and crop residues

b. Backyard goat raisers purchase more imported soybean meal per head than commercial broiler integrators

c. Feed millers sell exclusively to dairy carabao farmers and avoid poultry enterprises

d. Swine and poultry producers never purchase premixes or complete rations from commercial mills

49. When smallholder dairy cattle raisers organize into dairy cooperatives assisted by the National Dairy Authority, which operational bottleneck is most effectively resolved?

a. Eliminating the need to milk lactating cows daily

b. Pooling small daily milk yields for collective chilling, quality testing, processing, and institutional feeding program contracts

c. Replacing all lactating cows with beef steers to reduce feed demand

d. Exporting raw unpasteurized milk directly to neighboring countries by ship

50. Why do veterinary pharmaceutical companies, animal nutritionists, and state universities maintain close collaboration with commercial livestock associations?

a. To discourage the adoption of modern biosecurity and vaccination schedules

b. To align herd health programs, ration formulation, and applied research with emerging disease threats and farm productivity targets

c. To replace all private livestock farms with campus-managed demonstration units

d. To standardize a single uniform breed across every agroclimatic zone in the country

Part II. Detailed Answer Key and Rationales (Items 1–50)

Item	Answer	Detailed Rationale
1	a	Carabaos consume fibrous rice straw and weeds, returning organic manure rich in nitrogen, phosphorus, potassium, and organic matter to the paddy, reducing dependence on synthetic inorganic fertilizers.
2	b	Sheep and goats are smaller, manageable, adaptable to seasonal migration, and capable of surviving on sparse shrubs and low-quality browse in the arid Fertile Crescent before large-scale plow agriculture developed.
3	b	The Red Junglefowl (Gallus gallus) is lightweight, easily carried on boats or foot migrations, and thrives on low-input scavenging of insects, seeds, and household scraps.
4	b	Ruminants possess symbiotic rumen microbes that ferment cellulose and hemicellulose from non-arable grasslands into volatile fatty acids and microbial protein, upcycling non-human-edible plants into high-value food.
5	b	Wild boars are opportunistic omnivores that readily consumed human food refuse around early settlements and possess high fecundity (large litters and short gestation), facilitating rapid domestication.
6	b	Poultry droppings fall directly into the fishpond, providing nitrogen and phosphorus that stimulate phytoplankton and zooplankton blooms, which serve as natural feed for herbivorous and omnivorous fish.
7	b	Animal draft power from oxen and horses greatly expanded cultivated acreage per worker, allowed deeper soil tillage, and generated agricultural surpluses capable of supporting non-farming urban populations.
8	c	Animals organized into dominance hierarchies naturally follow a herd leader; early herders exploited this instinct by assuming the leadership role to guide and control large flocks.
9	a	Philippine native goats are well-adapted to high ambient heat and humidity and exhibit bipedal browsing behavior, allowing them to utilize shrubs, tree leaves, and weeds where temperate cattle suffer heat stress and nutritional deficits.
10	b	Dogs were domesticated from gray wolves during the Paleolithic era through a commensal pathway, scavenging camp scraps while aiding hunter-gatherers in tracking game and alerting camps to predators.

Item	Answer	Detailed Rationale
11	b	Pastured ducks forage on shattered palay grains, weed seeds, and invasive golden apple snails (Pomacea canaliculata), acting as biological pest and weed control agents while fertilizing the field.
12	a	Swine and poultry have simple stomachs incapable of extensive fiber digestion, requiring energy-dense cereal grains and protein meals that directly compete with human food supplies.
13	a	Through the Manila-Acapulco galleon trade, Spanish colonizers introduced Iberian and Mexican breeds of cattle, horses, sheep, goats, and swine, which interbred with indigenous stocks.
14	b	Smallholder farmers accumulate livestock as a store of wealth ("living bank") that appreciates through growth and reproduction and can be sold rapidly to pay for school fees, medical emergencies, or planting expenses.
15	b	Meat, milk, and eggs supply high-biological-value proteins containing all essential amino acids alongside highly bioavailable heme iron, zinc, calcium, and vitamin B12 absent in plant staples.
16	b	In fragmented, bunded, or deep-mud rice paddies where heavy tractors bog down or cannot maneuver, the swamp carabao provides reliable, self-renewing traction at minimal cash outlay.
17	b	Anaerobic biodigesters capture methane from swine effluent to generate farm electricity or heating fuel while converting waste into stabilized, odor-reduced bioslurry fertilizer.
18	a	Broilers reach market weight in roughly 28 to 35 days with superior feed conversion ratios, enabling rapid restocking and quick cash recovery compared to cattle, which have a 9-month gestation and multi-year grow-out.
19	b	Non-carcass components such as hides for leather, rendered bone and blood meals, collagen/gelatin, and endocrine extracts (e.g., heparin, insulin) add significant value beyond primary meat cuts.
20	b	Cattle and sheep graze the natural cover vegetation beneath mature coconut palms, reducing manual weeding expenses, recycling nutrients to the trees, and diversifying farm revenue per hectare.
21	b	Goats require low initial capital, minimal space, and simple housing, reproduce rapidly with frequent twinning, and are easily sold in local markets, empowering rural women and landless households.
22	b	Philippine Mallard duck (itik) production is anchored on processing eggs into incubated delicacies (balut and penoy) and brined salted eggs (itlog na maalat), which command strong domestic demand.
23	a	Unlike seasonal rainfed crops that concentrate labor at planting and harvest, livestock husbandry requires daily feeding, watering, and care, providing steady year-round household employment and income.
24	b	Domesticated animals serve as essential models for human physiology and disease, and supply bioprosthetic heart valves, polyclonal/monoclonal antibodies, antisera, and therapeutic hormones.

Item	Answer	Detailed Rationale
25	b	Processing perishable raw milk into artisanal cheeses (kesong puti), milk candies (pastillas), and pasteurized flavored milk extends shelf life and captures downstream retail profit margins.
26	b	Over 95 percent of the world's water buffalo population is concentrated in Asia, led by India, Pakistan, China, and Southeast Asian countries including the Philippines.
27	a	Global swine distribution reflects cultural and religious patterns: dense concentrations occur in China, Europe, and the Americas, whereas numbers are negligible across Muslim-majority regions where pork is prohibited.
28	b	The Philippines produces roughly 1 to 2 percent of its total national dairy requirement, relying heavily on imported skim milk powder, whole milk powder, and butterfat to meet consumer demand.
29	a	African Swine Fever is a highly contagious viral hemorrhagic fever in pigs with case fatality rates approaching 100 percent and no globally commercialized vaccine at the time, decimating the national hog herd.
30	b	Consistent with Bennett's Law, rising disposable incomes and urban lifestyles shift diets away from starchy staples toward higher per capita consumption of meat, eggs, dairy, and value-added convenience foods.
31	a	Feeds represent 60 to 70 percent of total production costs in swine and poultry; heavy reliance on imported soybean meal, feed wheat, and premixes exposes local farms to global price spikes and currency depreciation.
32	b	Ruminant foregut fermentation generates enteric methane (CH4), a potent greenhouse gas, while extensive cattle ranching expansion in tropical regions is a major driver of pasture-related deforestation.
33	a	Lowering import tariffs dampens consumer food inflation during domestic shortages, but prolonged surges of cheap imported frozen pork depress farmgate prices and erode incentives for local raisers to rebuild herds.
34	a	Elevated Temperature-Humidity Index (THI) values impair evaporative cooling in poultry and swine, causing animals to reduce feed intake to lower metabolic heat, thereby slowing growth, egg lay, and milk yield.
35	b	Poultry meat leads global meat growth because it is relatively inexpensive, efficiently converts feed to muscle, has a lower carbon footprint than beef, and faces no major religious prohibitions.
36	b	Urban sprawl into peri-urban agricultural zones inflates real estate prices and triggers residential zoning ordinances and nuisance complaints, pushing commercial livestock farms farther from urban markets.
37	a	Routine low-dose antibiotic feeding selects for resistant bacterial strains (antimicrobial resistance) that can spread to humans via contaminated meat, direct contact, or agricultural runoff.
38	b	Unlike nations with vast temperate grasslands, the Philippines faces scarce contiguous pastureland, small smallholder herd sizes, long cattle biological cycles, and costly finishing concentrates.

Item	Answer	Detailed Rationale
39	c	According to Philippine Statistics Authority data, nearly all carabaos (over 99 percent) and goats (around 98 percent) are raised in smallholder backyard farms rather than large commercial operations.
40	b	Region III (Central Luzon) and Region IV-A (CALABARZON) form the commercial livestock and poultry belt of the Philippines due to proximity to Metro Manila markets, ports, and feed mills.
41	a	In poultry contract growing, integrators supply day-old chicks, feeds, biologics, and veterinary oversight, while contract growers supply poultry houses, labor, water, and electricity for a performance-based fee.
42	b	Created under Republic Act No. 7307, the Philippine Carabao Center (PCC) is mandated to conserve, propagate, and promote the carabao as a source of draft power, meat, milk, and hide.
43	a	The Bureau of Animal Industry (BAI) leads animal health protection, disease surveillance, quarantine enforcement, and transboundary outbreak containment across the Philippines.
44	b	Under Republic Act No. 9296 (Meat Inspection Code), the National Meat Inspection Service (NMIS) regulates meat hygiene, accredits abattoirs and dressing plants, and enforces ante- and post-mortem inspection.
45	b	Viajeros bridge fragmented rural production and urban demand by buying small lots of animals directly from backyard farmers, handling transport and permits, and delivering stock to auction markets or slaughterhouses.
46	b	The Philippine Statistics Authority (PSA) compiles and publishes quarterly and annual livestock and poultry situation reports detailing animal inventories, production volumes, and farmgate prices.
47	a	Western Visayas, Central Visayas, and Northern Mindanao maintain large native chicken inventories supported by strong household backyard raising and cultural preference for native chicken dishes (e.g., tinola, inasal).
48	a	Intensive swine and poultry systems rely heavily on commercial compound feeds formulated by feed millers, whereas backyard goat production depends primarily on cut-and-carry forages, shrubs, and farm by-products.
49	b	Dairy cooperatives supported by the National Dairy Authority (NDA) aggregate small individual milk harvests into bulk volumes suitable for cold-chain chilling, pasteurization, and institutional milk feeding programs.
50	b	Public-private-academic partnerships align veterinary biologics, precision nutrition, and university research with real-world farm biosecurity and production efficiency challenges.