Agricultural Extension & Communication, PRC Board TOS Based Reviewer (Module D: Attributes of Technology and Module E: Communication In Extension) By Agriculture Review

50 Situational Practice Questions with Comprehensive Answer Key & Rationales

Module D: Attributes and Categories of Agricultural Technology (Items 1–14)

1. A newly released flood-tolerant rice variety yields 20 percent more grain and requires 15 percent less irrigation water than the traditional variety currently planted in a lowland barangay, prompting rapid uptake among growers. Which perceived attribute of technology primarily drives this rapid adoption?

- **a.** Complexity
- **b.** Relative advantage
- **c.** Indivisibility
- **d.** Obsolescence

2. An extension program promotes an improved backyard swine fattening ration in a predominantly Muslim farming municipality in Mindanao, yet zero households adopt the technology despite its proven high profit margin. Which attribute of technology was overlooked during program planning?

- **a.** Observability
- **b.** Trialability
- **c.** Compatibility with local cultural and religious values
- **d.** Technical divisibility

3. A precision fertigation system requires farmers to calibrate digital electrical conductivity sensors daily, mix five separate chemical stock tanks, and interpret computer spreadsheets. Because smallholder vegetable growers perceive the protocol as overly difficult to understand and operate, adoption stalls. Which attribute of technology is negatively affecting adoption?

- **a.** High complexity
- **b.** High relative advantage
- **c.** High trialability
- **d.** High observability

4. Smallholder corn farmers readily test a new foliar bio-fertilizer sold in small 100-milliliter trial sachets on one-tenth of a hectare, whereas they hesitate to adopt an expensive mechanical grain dryer that must be purchased as a single full-scale unit. Which attribute of technology explains why the bio-fertilizer is adopted much faster?

- **a.** Higher capital intensity
- **b.** Lower compatibility with existing land
- **c.** Greater technical complexity
- **d.** Higher trialability and divisibility, allowing low-risk small-scale experimentation before full commitment

---

5. When an extension technician introduces a bright green, tall-statured hybrid corn variety alongside an invisible soil-borne microbial inoculant, neighboring farmers rapidly ask for seeds of the hybrid corn after passing the roadside field while showing little interest in the inoculant. Which attribute of technology accounts for this difference?

- **a.** Higher mechanical complexity of the hybrid corn
- **b.** Higher observability of the hybrid corn's visible growth results compared to the hidden microbial inoculant
- **c.** Lower relative advantage of the hybrid corn
- **d.** Zero compatibility of microbial inoculants with tropical soils

---

6. A newly developed drip irrigation kit cuts water use by half and boosts tomato yields, yet upland farmers reject it because replacement emitters are unavailable within 100 kilometers and the initial cash outlay exceeds their entire annual harvest income. Which two practical characteristics of modern agricultural technology are missing for these farmers?

- **a.** Visual attractiveness and foreign patent protection
- **b.** High complexity and low divisibility
- **c.** Economic affordability and local technical feasibility with accessible spare parts
- **d.** Dependence on imported chemical fuels and heavy tractors

---

7. A rice breeder develops a new aromatic variety that matures in 90 days instead of 120 days, allowing rainfed farmers to harvest before late-season typhoons without altering their existing transplanting tools or culinary preferences. Which combination of technology attributes favors swift adoption?

- **a.** Strong relative advantage in risk reduction combined with high compatibility with existing farming practices and tastes
- **b.** High complexity combined with low trialability
- **c.** Low observability combined with high capital indivisibility
- **d.** Incompatibility with local diets combined with high input cost

8. A national research center releases a tangible, drought-tolerant mungbean seed variety alongside a separate written protocol detailing optimal crop rotation and pest-scouting intervals. How are these two innovations categorized?

- **a.** Both are purely mechanical hardware technologies
- **b.** The seed variety is a process technology while the scouting protocol is a product technology
- **c.** Both are strictly service technologies
- **d.** The seed variety is a product technology while the rotation and pest-scouting protocol is a process technology

---

9. Rather than promoting a single improved rice seed alone, an extension program delivers an integrated bundle consisting of certified inbred seeds, synchronized planting dates, leaf color chart nitrogen management, and controlled irrigation. Which category of agricultural technology is being promoted?

- **a.** Isolated component technology
- **b.** Package of technology
- **c.** Purely indigenous folklore
- **d.** Standalone mechanical hardware

---

10. A smallholder farmer lacks enough credit to adopt an entire five-part corn technology bundle all at once, so he adopts only the improved hybrid seed first during the wet season and adds split nitrogen fertilization the following season. Which category of technology adoption is he practicing initially?

- **a.** Full package adoption
- **b.** Complete technological rejection
- **c.** Component technology adoption
- **d.** Post-harvest service adoption

---

11. In a labor-scarce rice province where harvest wages have doubled, farmers invest heavily in combine harvesters and mechanical transplanters, whereas in a densely populated, land-scarce vegetable valley, farmers invest in hybrid seeds and greenhouse trellising. How do agricultural economists and extensionists categorize these two technology groups?

- **a.** Mechanical technologies are primarily labor-saving, whereas biological and chemical technologies are primarily land-saving and yield-increasing
- **b.** Mechanical technologies are land-saving while hybrid seeds are exclusively labor-saving
- **c.** Both categories require zero capital investment from farmers
- **d.** Biological technologies replace farm tractors while mechanical technologies increase soil fertility directly

AGRICULTURE REVIEW VERIFIED REVIEW AGRICULTUREREVIEW.COM

12. A provincial agricultural office launches a mobile text advisory platform and rapid soil-testing clinic that provides farmers with customized fertilizer prescriptions without selling physical seeds or tractors. Which category of agricultural technology does this represent?

- **a.** Tangible biological product technology
- **b.** Heavy mechanical hardware technology
- **c.** Extractive chemical technology
- **d.** Service and information technology

---

13. When an extension team introduces a manual, locally weldable hand-pushed rotary weeder made from recycled bicycle parts that costs 1,500 pesos and can be repaired by village blacksmiths, rather than an imported 800,000-peso robotic weeder, which category of technology are they deploying?

- **a.** Capital-intensive industrial technology
- **b.** Appropriate or intermediate technology tailored to smallholder resources and local maintenance capacity
- **c.** Obsolete non-functional hardware
- **d.** Proprietary biotechnology software

---

14. An agricultural drone used for aerial crop monitoring consists of the physical flying frame, battery, and multispectral camera alongside the specialized mapping algorithms and operator flight protocols needed to interpret crop stress maps. How are these two interdependent dimensions of technology distinguished?

- **a.** Both the flying frame and the mapping algorithms are purely indigenous practices
- **b.** The flying frame is software while the interpretation protocol is hardware
- **c.** The physical drone and camera constitute hardware, while the analytical knowledge, algorithms, and operational skills constitute software
- **d.** Hardware eliminates the need for any operator software or training

---

Module E: Communication in Extension (Items 15–50)

15. A newly hired extension officer delivers a soil acidity lecture to smallholder farmers using dense university terminology such as cation exchange capacity, exchangeable aluminum saturation, and stoichiometric lime equivalence, leaving the audience baffled. Which communication barrier disrupted the encoding and decoding process?

- **a.** Semantic noise caused by technical jargon unaligned with the receivers' vocabulary
- **b.** Physical acoustic noise from passing highway trucks
- **c.** Channel overload from using too many radio stations
- **d.** Excessive homophily between speaker and listeners

16. Farmers in a remote barangay listen intently when a respected veteran farmer-leader explains a new composting method, yet ignore the exact same technical advice delivered a week earlier by an unfamiliar outside sales agent. Which element of the communication process accounts for this sharp contrast?

- **a.** Channel bandwidth
- **b.** Physical noise
- **c.** Message length
- **d.** Source credibility and homophily between the communicator and the audience

---

17. An extension communicator preparing a poster on safe pesticide mixing chooses large sequential step-by-step illustrations, bold contrast colors, and short imperative phrases in the local dialect instead of dense paragraphs of fine print. Which specific aspect of the message element is being carefully designed?

- **a.** Source authority
- **b.** Message treatment and code
- **c.** Physical feedback loop
- **d.** Institutional hierarchy

---

18. During an outdoor barangay workshop on poultry vaccination held right beside a roaring rice thresher at noon in scorching heat, farmers struggle to hear instructions and lose concentration quickly. Which type of interference is undermining the communication process?

- **a.** Semantic distortion from dialect differences
- **b.** Excessive positive feedback
- **c.** Physical and environmental noise
- **d.** Cultural homophily

---

19. When presenting a new drought-tolerant corn hybrid to experienced, skeptical farmers who already know the local market well, an extension specialist openly mentions both its higher yield under dry spells and its slightly higher seed cost, while explaining how net profit still rises. Why is this two-sided message treatment more effective than a purely one-sided pitch?

- **a.** It enhances source credibility and inoculates skeptical, informed audiences against counterarguments from neighbors
- **b.** It confuses farmers so they buy seeds without questioning costs
- **c.** It hides all potential risks of the new hybrid from buyers
- **d.** It eliminates the need for local field demonstrations

20. A group of traditional vegetable growers attends a seminar on reducing chemical insecticide sprays, yet afterward they remember only the brief comment confirming that caterpillars damage leaves while tuning out all data showing natural predators control pests. Which receiver-side psychological phenomenon is occurring?

- **a.** Encoding fluency
- **b.** Channel redundancy
- **c.** Mechanical distortion
- **d.** Selective perception and selective retention aligned with pre-existing beliefs

---

21. An extension communicator wants to teach complex hands-on cacao bud-grafting to 15 farmers rather than merely announce a subsidy registration deadline. Why must she select a face-to-face workshop channel over a brief text-message blast?

- **a.** Text messages cannot reach farmers who own mobile phones
- **b.** Face-to-face channels provide high media richness involving sight, touch, demonstration, and instant two-way correction required for complex psychomotor skills
- **c.** Face-to-face channels always cost less per thousand people reached than mass media
- **d.** Text messages are legally restricted to weather forecasting

---

22. A young male agronomist dressed in a formal business suit lectures elderly upland women farmers while standing on a raised stage and speaking down in a condescending tone, causing the farmers to remain silent and disengaged. Which communication barrier is most evident?

- **a.** Purely acoustic interference
- **b.** Lack of visual projection screens
- **c.** Psychological and social-status barrier arising from heterophily and poor empathy
- **d.** Overuse of local idioms

---

23. Before writing a radio script on dairy mastitis prevention, an extension officer interviews ten local dairy farmers to learn their current milking habits, misconceptions, local terms for udder swelling, and peak radio listening hours. Which communication design principle is she applying?

- **a.** Audience analysis to tailor message content, code, and channel to receivers' actual context
- **b.** One-way top-down broadcasting without receiver consideration
- **c.** Post-campaign summative evaluation
- **d.** Technical jargon standardization

---

24. Halfway through a barangay training on calibrating knapsack sprayers, the extension agent notices several farmers furrowing their brows, whispering confusedly to seatmates, and hesitating when asked to hold the nozzle. How should the agent interpret and respond to this feedback?

a. Ignore the expressions and speak faster to finish on schedule
b. Scold the farmers for whispering during a formal lecture
c. End the workshop immediately and hand out written exams
d. Recognize these cues as immediate non-verbal negative feedback indicating confusion, pause to clarify in simpler terms, and invite hands-on practice

---

25. Why does an agricultural radio broadcast without a call-in hotline or text-back number suffer a major communication disadvantage compared to a face-to-face farmer meeting?

a. Radio waves cannot travel to rural barangays
b. Feedback is delayed or absent, preventing the communicator from verifying whether listeners decoded the message accurately or clarifying misunderstandings immediately
c. Radio broadcasts cannot deliver messages in local dialects
d. Face-to-face meetings always reach ten times more people simultaneously than radio

---

26. Before spending 150,000 pesos to print 10,000 illustrated leaflets on African swine fever biosecurity, an extension office shows draft copies to 20 backyard hog raisers and discovers they misinterpreted a red cross icon as a hospital rather than a prohibition sign. What type of feedback mechanism prevented a costly communication failure?

a. Post-campaign impact audit
b. Delayed summative feedback
c. Pre-testing or feedforward evaluation with representative target receivers
d. Unilateral top-down message encoding

---

27. During a pesticide safety workshop, an extension worker asks participants to explain back in their own words how many tablespoons of fungicide to mix per 16-liter tank and to demonstrate measuring with clean water. Why is this active feedback check critical?

a. It verifies true comprehension and decoding accuracy rather than relying on polite passive nodding, preventing dangerous chemical overdosing in the field
b. It embarrasses farmers who forgot their reading glasses
c. It replaces the need for printed product labels entirely
d. It reduces the workshop into a one-way linear broadcast

---

28. A regional extension service sets up a toll-free farmer helpline and text-feedback portal following a nationwide rice seed distribution. When hundreds of farmers report that a new variety shatters easily during mechanical harvesting, extension managers forward the data to plant breeders. What systemic role is feedback fulfilling here?

a. Purely cosmetic public relations
b. Increasing semantic noise inside research stations
c. Replacing local extension agents with automated machines
d. Closing the research-extension-farmer loop so field performance guides future technology refinement and breeding priorities

---

29. When an extension facilitator conducts an anonymous suggestion-box and open-forum evaluation immediately after a three-day livestock training, participants candidly report that the nutrition lecture was too theoretical while the silage-making demo was highly useful. How does this feedback improve extension communication?

- **a.** It proves that farmers dislike learning about animal nutrition
- **b.** It provides actionable diagnostic feedback enabling the facilitator to redesign future sessions with more practical demonstrations and clearer explanations
- **c.** It shows that silent lectures are always superior to field work
- **d.** It eliminates the need to follow up with trainees on their farms

---

30. Why does polite silence or unanimous nodding from rural farmers during a barangay meeting often mislead inexperienced extension workers regarding communication success?

- **a.** Silence always proves 100 percent technical mastery and immediate adoption
- **b.** Rural farmers never experience confusion about new technologies
- **c.** Cultural deference to authority can mask confusion or disagreement, requiring open-ended questions and practical return-demonstrations to obtain genuine feedback
- **d.** Nodding is strictly a form of physical environmental noise

---

31. A municipal mayor delivers a motivating keynote speech at an annual municipal farmers' day rally to rally community support for a province-wide tree-planting drive, focusing on speaker credibility, emotional appeal, and audience inspiration. Which classical communication model best frames this public-speaking event?

- **a.** Aristotle's model of communication
- **b.** Shannon and Weaver's mathematical noise model
- **c.** Two-step flow model
- **d.** Convergence model

---

32. An extension planner designs an awareness campaign on avian influenza by systematically mapping five questions: who is the official spokesperson, what key biosecurity message is sent, which radio and social channels carry it, to whom among poultry raisers it is directed, and with what measurable behavioral effect. Which communication model is guiding this plan?

- **a.** Schramm's circular model
- **b.** Barnlund's transactional model
- **c.** Berlo's source-message-channel-receiver model
- **d.** Lasswell's model of communication

33. When designing a rural radio warning system for typhoon-prone coastal fisherfolk, a communication engineer focuses on transmitter wattage, signal static during heavy rain, receiver radio battery life, and redundant voice broadcasts to prevent message distortion. Which communication model directly addresses these technical signal and noise issues?

- **a.** Aristotle's rhetorical model
- **b.** Shannon and Weaver's transmission model
- **c.** Rogers' innovation-decision model
- **d.** Participatory convergence model

---

34. An extension specialist preparing a cross-cultural training for indigenous upland farmers carefully examines her own attitudes, technical knowledge, and cultural background alongside the farmers' attitudes, language, and social norms, while choosing visual, auditory, and tactile channels. Which communication model highlights these exact factors across source, message, channel, and receiver?

- **a.** Lasswell's five-question model
- **b.** Two-step flow model
- **c.** Berlo's communication model
- **d.** Aristotle's persuasion model

---

35. During a participatory barangay planning session, a livestock extensionist uses local farming analogies familiar to backyard raisers while listening actively as farmers share seasonal feed constraints, so both sides continuously encode, interpret, and decode messages within an expanding shared field of experience. Which communication model is being practiced?

- **a.** Schramm's interactive model of communication
- **b.** Aristotle's one-way oratorical model
- **c.** Lasswell's linear propaganda model
- **d.** One-way mass broadcast model

---

36. An agricultural institute broadcasts weekly technical updates on new salt-tolerant rice varieties over regional radio, knowing that progressive village opinion leaders regularly tune in, evaluate the advice, and subsequently persuade less-connected neighbors through personal conversations. Which communication model explains this indirect community influence?

- **a.** Shannon and Weaver's linear model
- **b.** Berlo's sensory channel model
- **c.** Aristotle's public speech model
- **d.** Two-step flow model of communication

37. When evaluating the effectiveness of linear models such as Aristotle's and Lasswell's for teaching complex integrated pest management to smallholder farmers, what major structural weakness limits their usefulness?

- **a.** They spend too much time collecting farmer feedback before speaking
- **b.** They portray communication as a one-way flow from active expert to passive audience without explicit feedback loops or mutual dialogue
- **c.** They prohibit the use of public speeches or mass radio completely
- **d.** They require every farmer to own a smartphone before participating

---

38. Why does Schramm's emphasis on overlapping fields of experience explain why an extension worker who grew up in a farming family often communicates new crop technologies more effectively than a scientist who speaks purely in abstract laboratory terms?

- **a.** Because laboratory scientists have zero knowledge of plant biology
- **b.** Because shared fields of experience eliminate all physical radio static
- **c.** Because meaningful decoding occurs only where the sender's and receiver's lived experiences, language, and cultural reference points overlap
- **d.** Because Schramm's model forbids any exchange of new scientific ideas

---

39. In a collaborative watershed conservation project where highland farmers, municipal planners, and soil scientists meet repeatedly over several months to negotiate shared land-use rules until mutual understanding emerges, why is Kincaid's convergence model more effective than a one-way transmission model?

- **a.** It treats communication as an iterative, mutual process of sharing information until participants converge toward common understanding and collective action
- **b.** It allows scientists to issue rigid commands without hearing farmer objections
- **c.** It assumes farmers already agree 100 percent before the first meeting begins
- **d.** It eliminates the need for any interpersonal dialogue

---

40. Although Berlo's model is highly valuable for analyzing how communicator knowledge, audience culture, and sensory channels shape message fidelity, what key weakness must an extension planner compensate for when applying it in the field?

- **a.** It ignores the existence of message content and language completely
- **b.** It forbids using visual and tactile channels in farming demonstrations
- **c.** It applies exclusively to electronic telephone networks
- **d.** It remains fundamentally linear and does not explicitly incorporate feedback mechanisms or environmental noise

41. Why does the Two-Step Flow model frequently prove more effective than direct mass media appeals alone in persuading cautious rural Filipino farmers to adopt unfamiliar livestock vaccines?

- **a.** Because rural barangays have zero access to radio or television broadcasts
- **b.** Because interpersonal endorsement from trusted local opinion leaders filters mass media information, lowers perceived risk, and validates local relevance
- **c.** Because opinion leaders force neighbors to vaccinate animals under threat of arrest
- **d.** Because mass media messages are legally banned from mentioning livestock health

---

42. An extension campaign targeting rural families struggling with low adoption of backyard vegetable gardening launches a popular 15-minute daily local radio drama featuring relatable village characters who solve household nutrition and income problems through container gardening. Which communication strategy is being employed?

- **a.** Crisis risk communication
- **b.** Formal academic lecturing
- **c.** Entertainment-education strategy
- **d.** Regulatory compliance enforcement

---

43. When an abrupt outbreak of highly pathogenic avian influenza is detected in a poultry-producing province, the extension communication team immediately releases clear, verified, non-panic advisories specifying exact biosecurity steps, hotline numbers, and transparent updates every 12 hours. Which communication strategy is being applied?

- **a.** Crisis and risk communication
- **b.** Entertainment-education drama
- **c.** Long-term brand positioning
- **d.** Passive archival publishing

---

44. A provincial extension office realizes that young agri-entrepreneurs rely heavily on short mobile video clips and social media groups, whereas older traditional rice farmers prefer early-morning provincial AM radio and barangay face-to-face meetings. How should the office apply strategic communication planning?

- **a.** Use exclusively social media and ignore older farmers until they buy smartphones
- **b.** Send identical dense printed reports to both groups to save effort
- **c.** Cancel all radio and digital channels in favor of annual town hall speeches
- **d.** Apply audience segmentation and a multi-channel strategy tailoring distinct formats and media to each subgroup's habits and needs

45. To encourage smallholder farmers to wear protective masks and gloves while spraying pesticides despite hot weather, an extension agency applies commercial marketing tools—researching barriers to comfort, subsidizing breathable gear, placing point-of-sale reminders at agro-supply stores, and framing safety around protecting farmers' children. Which communication strategy is this?

- **a.** Pure top-down technical decree
- **b.** Social marketing for behavioral change
- **c.** Passive library archiving
- **d.** Unilateral price skimming

---

46. Instead of bringing in outside university professors to lecture on organic rice duck farming, an extension team films short smartphone videos of local barangay farmers speaking in their own dialect about their real mistakes, solutions, and harvest profits, then screens them via portable projectors in neighboring villages followed by group discussion. Which strategy is being utilized?

- **a.** One-way institutional propaganda
- **b.** Anonymous print distribution
- **c.** Participatory farmer-to-farmer video communication
- **d.** Automated telemarketing

---

47. An anti-pesticide-misuse campaign relies exclusively on terrifying posters showing skulls and hospitalized farmers without explaining affordable alternative pest-control practices or proper protective equipment. Why does communication research show this high-fear, low-efficacy strategy often fails?

- **a.** Without practical, doable solutions that build self-efficacy, strong fear appeals trigger defensive avoidance, denial, or fatalism rather than safe behavior change
- **b.** Farmers enjoy looking at terrifying posters so much they stop farming
- **c.** Fear appeals always guarantee immediate 100 percent adoption even without solutions
- **d.** Smallholder farmers never care about their family's health

---

48. After spending 500,000 pesos distributing 20,000 colorful brochures on composting across a province, an extension manager claims total campaign success solely because every brochure was handed out. What critical flaw undermines this effectiveness assessment?

- **a.** Brochures cannot be printed in color for agricultural topics
- **b.** High distribution volume automatically proves every recipient changed farm behavior
- **c.** Composting cannot be explained in printed format
- **d.** Output reach alone measures exposure rather than actual comprehension, attitude shift, or sustained adoption of composting practices in the field

49. When comparing a participatory community radio campaign co-produced with local farmers against a centrally scripted national television commercial for promoting watershed reforestation, why does participatory community radio often achieve deeper behavioral commitment locally?

- **a.** Because television has zero visual appeal compared to audio radio
- **b.** Because local ownership, familiar voices, local dialect, and two-way dialogue directly address site-specific concerns and foster community trust
- **c.** Because community radio reaches foreign countries faster than national television
- **d.** Because national television legally forbids discussing environmental conservation

50. An extension agency evaluates two strategies for driving adoption of a climate-smart crop calendar: Strategy A broadcasts radio reminders alone, while Strategy B pairs the same radio broadcasts with village listening clubs, hands-on field demos, and timely mobile text reminders. Why does Strategy B consistently achieve much higher adoption rates?

- **a.** Because radio broadcasts cancel out the benefits of mobile text messages
- **b.** Because single-channel repetition always confuses rural listeners
- **c.** Because multi-channel synergy reinforces awareness, provides social validation and hands-on skill building, and prompts timely action at key decision stages
- **d.** Because Strategy B eliminates all need for local extension facilitators

Detailed Answer Key & Rationales (Items 1–50)

Each entry below indicates the verified correct letter choice alongside a concise board-exam rationale aligned with PRC Table of Specifications for Agricultural Extension and Communication.

Item	Answer	Correct Option & Detailed Rationale
1	b	**Relative advantage:** Defined by Rogers as the degree to which an innovation is perceived as better than the idea or practice it supersedes—here demonstrated by 20% higher grain yield and 15% water savings.
2	c	**Compatibility with local cultural and religious values:** Compatibility measures consistency with existing sociocultural values, beliefs, and norms; swine production conflicts directly with Islamic dietary and religious prohibitions.
3	a	**High complexity:** Complexity is the perceived difficulty of understanding and using an innovation; unlike other attributes, complexity is negatively correlated with the rate of adoption.
4	d	**Higher trialability and divisibility, allowing low-risk small-scale experimentation before full commitment:** Small 100-mL sachets let farmers test the bio-fertilizer on a tiny plot with minimal financial risk, unlike an indivisible grain dryer.
5	b	**Higher observability of the hybrid corn's visible growth results compared to the hidden microbial inoculant:** Observability is the degree to which results are visible to others; conspicuous roadside crop vigor stimulates peer inquiry and rapid diffusion.

Item	Answer	Correct Option & Detailed Rationale
6	c	**Economic affordability and local technical feasibility with accessible spare parts:** Beyond theoretical agronomic superiority, appropriate farm technologies must fit farmers' cash flow and rely on locally available maintenance parts.
7	a	**Strong relative advantage in risk reduction combined with high compatibility with existing farming practices and tastes:** Escaping typhoons provides clear economic security, while preserving existing tools and eating preferences removes switching barriers.
8	d	**The seed variety is a product technology while the rotation and pest-scouting protocol is a process technology:** Product technologies are physical, tangible inputs (seeds, tools), whereas process technologies are knowledge-based methods and management sequences.
9	b	**Package of technology:** A package of technology (POT) combines complementary genetic, cultural, and input practices designed to work synergistically for optimal farm productivity.
10	c	**Component technology adoption:** Resource-constrained smallholders frequently adopt individual elements of a recommended package sequentially—starting with low-cost, high-return items—rather than all at once.
11	a	**Mechanical technologies are primarily labor-saving, whereas biological and chemical technologies are primarily land-saving and yield-increasing:** Per Hayami and Ruttan's induced innovation framework, mechanization substitutes for scarce labor, while biological-chemical inputs raise yield per hectare where land is scarce.
12	d	**Service and information technology:** Diagnostic testing and digital advisory platforms deliver decision-support knowledge and technical services rather than physical farm commodities.
13	b	**Appropriate or intermediate technology tailored to smallholder resources and local maintenance capacity:** Appropriate technology is affordable, small-scale, energy-efficient, and repairable using local materials and village artisan skills.
14	c	**The physical drone and camera constitute hardware, while the analytical knowledge, algorithms, and operational skills constitute software:** Every technology comprises a physical tool component (hardware) paired with the information and operational know-how (software) needed to use it effectively.
15	a	**Semantic noise caused by technical jargon unaligned with the receivers' vocabulary:** Semantic noise occurs when symbols, words, or technical terms carry different meanings—or no intelligible meaning—for the receiver than intended by the sender.
16	d	**Source credibility and homophily between the communicator and the audience:** Farmers trust peers who share their socioeconomic background, farming experience, and community ties (homophily) far more than unfamiliar outsiders.
17	b	**Message treatment and code:** In Berlo's SMCR framework, code refers to the language or visual symbols used, while treatment is the way the communicator arranges and presents content for maximum clarity and appeal.

Item	Answer	Correct Option & Detailed Rationale
18	c	**Physical and environmental noise:** External loud machinery and extreme midday heat are environmental distractions that physically degrade signal reception and listener attention.
19	a	**It enhances source credibility and inoculates skeptical, informed audiences against counterarguments from neighbors:** Communication research shows two-sided messages are superior when audiences are knowledgeable, initially skeptical, or likely to hear opposing viewpoints.
20	d	**Selective perception and selective retention aligned with pre-existing beliefs:** Receivers unconsciously filter and recall message fragments that reinforce existing habits while discounting information that challenges familiar routines.
21	b	**Face-to-face channels provide high media richness involving sight, touch, demonstration, and instant two-way correction required for complex psychomotor skills:** Teaching manual grafting requires tactile demonstration and immediate error correction that lean text channels cannot provide.
22	c	**Psychological and social-status barrier arising from heterophily and poor empathy:** Wide differences in age, attire, physical elevation, and condescending tone create social distance that suppresses open dialogue.
23	a	**Audience analysis to tailor message content, code, and channel to receivers' actual context:** Effective extension communication begins by understanding audience knowledge gaps, local terminology, and media schedules before drafting messages.
24	d	**Recognize these cues as immediate non-verbal negative feedback indicating confusion, pause to clarify in simpler terms, and invite hands-on practice:** Facial expressions and hesitation serve as real-time feedback allowing the facilitator to adjust pacing and clarity immediately.
25	b	**Feedback is delayed or absent, preventing the communicator from verifying whether listeners decoded the message accurately or clarifying misunderstandings immediately:** Traditional one-way mass media lack immediate listener-to-broadcaster response channels unless paired with interactive hotlines or listening groups.
26	c	**Pre-testing or feedforward evaluation with representative target receivers:** Pre-testing draft extension materials on a small sample of the target audience catches visual or cultural misinterpretations before costly mass printing.
27	a	**It verifies true comprehension and decoding accuracy rather than relying on polite passive nodding, preventing dangerous chemical overdosing in the field:** Asking trainees to paraphrase and perform a return-demonstration confirms actual skill acquisition and safe dosing.
28	d	**Closing the research-extension-farmer loop so field performance guides future technology refinement and breeding priorities:** Systematic upward feedback turns extension from a one-way delivery pipeline into a two-way learning system linking farmers back to researchers.

Item	Answer	Correct Option & Detailed Rationale
29	b	**It provides actionable diagnostic feedback enabling the facilitator to redesign future sessions with more practical demonstrations and clearer explanations:** Formative training evaluations pinpoint which instructional methods worked and which modules require practical redesign.
30	c	**Cultural deference to authority can mask confusion or disagreement, requiring open-ended questions and practical return-demonstrations to obtain genuine feedback:** In many rural communities, politeness discourages public contradiction of visiting officials, making active verification essential.
31	a	**Aristotle's model of communication:** Aristotle's speaker-centered rhetorical model (Speaker, Speech, Occasion, Audience, Effect) focuses on public persuasion through ethos, pathos, and logos.
32	d	**Lasswell's model of communication:** Harold Lasswell's classic formula—Who says What, in Which channel, to Whom, with What effect—is widely used for planning and analyzing mass communication campaigns.
33	b	**Shannon and Weaver's transmission model:** Originally formulated for telecommunications engineering, this model highlights information source, transmitter, channel, noise interference, receiver, and destination.
34	c	**Berlo's communication model:** David Berlo's SMCR model details how communication skills, attitudes, knowledge, social system, and culture of both Source and Receiver interact with Message elements and the five sensory Channels.
35	a	**Schramm's interactive model of communication:** Wilbur Schramm conceptualized communication as a circular, two-way exchange where both participants act as encoder, interpreter, and decoder within overlapping fields of experience.
36	d	**Two-step flow model of communication:** Proposed by Lazarsfeld and Katz, this model shows mass media messages often flow first to active opinion leaders, who then interpret and pass influence on to peers via interpersonal networks.
37	b	**They portray communication as a one-way flow from active expert to passive audience without explicit feedback loops or mutual dialogue:** Linear transmission models overlook two-way farmer participation, indigenous knowledge, and iterative clarification.
38	c	**Because meaningful decoding occurs only where the sender's and receiver's lived experiences, language, and cultural reference points overlap:** Shared agricultural background expands the common field of experience, enabling accurate encoding and empathetic decoding.
39	a	**It treats communication as an iterative, mutual process of sharing information until participants converge toward common understanding and collective action:** Lawrence Kincaid's convergence model replaces one-way persuasion with continuous dialogue aimed at mutual agreement.
40	d	**It remains fundamentally linear and does not explicitly incorporate feedback mechanisms or environmental noise:** While rich in analyzing psychological and cultural variables, Berlo's SMCR diagram lacks explicit feedback loops and noise barriers.

Item	Answer	Correct Option & Detailed Rationale
41	b	**Because interpersonal endorsement from trusted local opinion leaders filters mass media information, lowers perceived risk, and validates local relevance:** Mass media build initial awareness, but trusted neighbors provide the social proof needed for risky farm investments.
42	c	**Entertainment-education strategy:** Entertainment-education (edutainment) embeds practical educational messages inside engaging dramatic storylines so audiences learn through relatable role models.
43	a	**Crisis and risk communication:** During acute biosecurity emergencies, rapid, accurate, transparent, and actionable guidance prevents rumor-driven panic and contains disease spread.
44	d	**Apply audience segmentation and a multi-channel strategy tailoring distinct formats and media to each subgroup's habits and needs:** Dividing heterogeneous farming populations into distinct media-use segments maximizes reach and message relevance.
45	b	**Social marketing for behavioral change:** Social marketing applies the 4Ps (product, price/cost barrier, place, promotion) and audience insight to promote socially beneficial health and safety behaviors.
46	c	**Participatory farmer-to-farmer video communication:** Peer-produced local videos combine high visual credibility, local dialect, and facilitated group reflection to accelerate horizontal farmer learning.
47	a	**Without practical, doable solutions that build self-efficacy, strong fear appeals trigger defensive avoidance, denial, or fatalism rather than safe behavior change:** Per the Extended Parallel Process Model, high threat without high efficacy causes psychological rejection rather than protective action.
48	d	**Output reach alone measures exposure rather than actual comprehension, attitude shift, or sustained adoption of composting practices in the field:** Counting distributed leaflets confuses communication outputs with genuine behavioral and agronomic outcomes.
49	b	**Because local ownership, familiar voices, local dialect, and two-way dialogue directly address site-specific concerns and foster community trust:** Participatory community radio treats farmers as co-creators rather than passive targets, strengthening local commitment.
50	c	**Because multi-channel synergy reinforces awareness, provides social validation and hands-on skill building, and prompts timely action at key decision stages:** Combining mass media, interpersonal group learning, and timely reminders addresses every stage of the innovation-decision process.