

**MIZORAM PUBLIC SERVICE COMMISSION**  
**AGRICULTURE & ALLIED SERVICES (COMBINED TECHNICAL)**  
**EXAMINATION, 2024 FOR RECRUITMENT OF**  
**JR. GRADE OF MIZORAM AGRICULTURE SERVICE UNDER**  
**AGRICULTURE & FARMERS' WELFARE DEPARTMENT,**  
**GOVERNMENT OF MIZORAM, DECEMBER-2024**

**AGRICULTURE SCIENCE PAPER-III**

Time Allowed : 3 hours

FM : 200

**SECTION - A (Multiple Choice Questions) (100 Marks)**

*All questions carry equal mark of 2 each. Attempt all questions.*

*This Section should be answered only on the **OMR Response Sheet** provided.*

1. The basic principle of extension education is-
  - (a) Learning by reading
  - (b) Learning by doing
  - (c) Learning by seeing
  - (d) Learning by hearing
2. A B C of posters mean-
  - (a) Attractive, Brief and Complete
  - (b) Attractive, Brief and Clear
  - (c) Attractive, Brief and Creative
  - (d) Accurate, Bold and Concise
3. Which of the following is a core principle of Extension Education?
  - (a) Top-down approach to planning
  - (b) Emphasis on passive learning
  - (c) Encouragement of participatory learning and involvement
  - (d) Focus on urban populations
4. To show relative worth of a new practice over an old one, the extension method best suited to-
  - (a) Method demonstration
  - (b) Training
  - (c) Result demonstration
  - (d) Group demonstration
5. Which of the following is the first step in Extension Programme Planning?
  - (a) Evaluation of the program
  - (b) Selection of teaching methods
  - (c) Identification of community needs
  - (d) Monitoring program activities
6. Which communication model emphasizes a one-way flow of information from sender to receiver without feedback?
  - (a) Shannon and Weaver Model
  - (b) Schramm Model
  - (c) Transactional Model
  - (d) Interactive Model

7. Which of the following best differentiates monitoring from evaluation?
- (a) Monitoring is done at the end of a project, while evaluation is continuous.
  - (b) Monitoring tracks ongoing activities, while evaluation assesses the overall impact.
  - (c) Monitoring only focuses on financial data, while evaluation is holistic.
  - (d) Monitoring is for stakeholders, while evaluation is for funders only.
8. Demand for agricultural products is relatively-
- (a) Less Elastic
  - (b) More Elastic
  - (c) Less Inelastic
  - (d) More Inelastic
9. For a farming system, the best PRA exercise:
- (a) Transect walk
  - (b) Resource mapping
  - (c) Time line
  - (d) Chapati diagram
10. A production function with unitary elasticity indicates-
- (a) Increasing returns
  - (b) Decreasing returns
  - (c) Nothing
  - (d) Constant returns
11. The Intensive Agricultural Development Programme popularly known as package programme was started in the year-
- (a) 1959
  - (b) 1960
  - (c) 1964
  - (d) 1970
12. What is bullet loan?
- (a) Single repayment loan having no amortization
  - (b) Single repayment loan having amortization
  - (c) Multiple repayment loan having amortization
  - (d) Multiple repayment loan having no amortization
13. At the adoption stage, information source is-
- (a) Village level change agent and to some extent mass media
  - (b) Extension agency and other farmer
  - (c) Informal person source including family members
  - (d) Self-experience gained at trial stage
14. Discounting in the context of agricultural finance is used to-
- (a) Increase the future value of an investment.
  - (b) Determine the present value of a future amount of money.
  - (c) Adjust principal based on tax incentives.
  - (d) Calculate immediate repayment values of loans.
15. Which of the following institutions is primarily responsible for price stabilization in agricultural marketing in India?
- (a) National Bank for Agriculture and Rural Development (NABARD)
  - (b) Food Corporation of India (FCI)
  - (c) Reserve Bank of India (RBI)
  - (d) Indian Council of Agricultural Research (ICAR)

16. The purpose of the Lead Bank Scheme in India is to:
- (a) Allow a single bank to oversee and monopolize credit distribution within a specific rural area.
  - (b) Enable a selected bank to coordinate and monitor the rural credit planning process within each district.
  - (c) Restrict the provision of rural credit only to certain banks authorized by the government.
  - (d) Establish a designated bank to increase private sector involvement in rural financial services.
17. Under distress sale, what is the relationship between marketed and marketable surplus for a farmer?
- (a) Marketed surplus = Marketable surplus
  - (b) Marketed surplus > Marketable surplus
  - (c) Marketed surplus < Marketable surplus
  - (d) Marketed surplus = 0
18. Demand for goods which are needed for further production is called-
- (a) Derived demand
  - (b) Autonomous demand
  - (c) Direct demand
  - (d) Cross demand
19. In an ecological pyramid, the greatest amount of energy is typically found in which level?
- (a) Producers (plants)
  - (b) Primary consumers (herbivores)
  - (c) Secondary consumers (carnivores)
  - (d) Decomposers
20. The farm from which 50% or more income is derived from a single enterprise is called-
- (a) Intensive farming
  - (b) Specialized farming
  - (c) Diversified farming
  - (d) Mixed farming
21. The central AGMARK lab is located at-
- (a) Kolkata
  - (b) Mumbai
  - (c) Nagpur
  - (d) New Delhi
22. Which of the following represents the correct sequence of energy flow in an ecosystem?
- (a) Producer → Consumer → Decomposer → Sun
  - (b) Sun → Producer → Consumer → Decomposer
  - (c) Consumer → Producer → Decomposer → Sun
  - (d) Decomposer → Consumer → Producer → Sun
23. Who coined the term acid rain?
- (a) Christ Ralph
  - (b) Elmer Joseph Clark
  - (c) Ernest Flower
  - (d) Robert Angus Smith
24. Equity value of the farm is known/derived from-
- (a) Balanced sheet
  - (b) Income statement
  - (c) Cash flow statement
  - (d) Budgeting
25. Which type of machine is commonly used to remove dust and lighter particles from seeds?
- (a) Roller mill
  - (b) Air-screen cleaner
  - (c) De-stoner
  - (d) Disc separator
26. The term ecosystem was proposed by-
- (a) A.V. Leeuwenhock
  - (b) A.G.Tansley
  - (c) E. Hartigan
  - (d) E.J.Butler

27. In food processing, HACCP stands for-
- (a) Hazard Analysis Critical Control Point
  - (b) Hazard Assessment Critical Control Procedure
  - (c) Health Analysis and Critical Control Process
  - (d) Hazard Analysis and Chemical Control Protocol
28. The short-range weather forecasting, period of validity is-
- (a) Upto 2 days
  - (b) Upto 4 days
  - (c) Upto 5 days
  - (d) Upto 6 days
29. The first Biosphere reserve in India is-
- (a) Nilgiri
  - (b) Sundarban
  - (c) Nanda Devi
  - (d) Nokrek
30. What is the correct order of 3R principle for waste management?
- (a) Recycle, Reuse, Reduce
  - (b) Reduce, Reuse, Recycle
  - (c) Recycle, Reduce, Reuse
  - (d) Reduce, Remove, Recycle
31. The primary purpose of silo in agricultural storage is to-
- (a) Maintain high moisture levels
  - (b) Store grain at high temperatures
  - (c) Store bulk quantities of dry materials for extended periods
  - (d) Remove pests from stored grains
32. Enrichment of water bodies by nutrient that causes damage to the ecosystem is called-
- (a) Plankton
  - (b) Degradation
  - (c) Biome
  - (d) Eutrophication
33. The set of ecosystems is called-
- (a) Biodiversity
  - (b) Ecology
  - (c) Biome
  - (d) Hydrosphere
34. The diversity within a particular area or ecosystem and is usually expressed by the number of species in that ecosystem is-
- (a) Genetic biodiversity
  - (b) Species biodiversity
  - (c) Alpha biodiversity
  - (d) Beta biodiversity
35. Which of the following biochemical properties affects the texture and sensory characteristics of fruits during processing?
- (a) Pectin content and cell wall integrity
  - (b) Carotenoid concentration and fat content
  - (c) Moisture activity and amino acid profile
  - (d) Chlorophyll concentration and mineral content

36. Which of the following practices is primarily used in quality control to ensure the safety of finished food products?
- (a) Organoleptic testing to check flavor and texture
  - (b) Microbiological testing to detect harmful pathogens
  - (c) Determining the visual appeal through color matching
  - (d) Packaging testing to evaluate material strength
37. Zero energy cool chamber developed at-
- (a) IIHR
  - (b) ICAR
  - (c) IARI
  - (d) ICRISAT
38. What is the main objective of blanching vegetables before freezing?
- (a) To improve taste
  - (b) To inactivate enzymes
  - (c) To enhance color
  - (d) To remove pesticides
39. The size of a seed driller is expressed by-
- (a) Amount of seed sown per unit time
  - (b) Length  $\times$  width of the machine
  - (c) The number of furrow openers  $\times$  distance between two furrow openers
  - (d) Area covered per unit time
40. Sub soiler plough is best suited for-
- (a) Deep ploughing
  - (b) Breaking hard pan
  - (c) Making ditches
  - (d) Intercultural operations
41. BHP of an engine indicates:
- (a) Power in cylinder
  - (b) Power on flywheel
  - (c) Frictional power
  - (d) Power at PTO pulley
42. Central Institute of Post-harvest Engineering and Technology is located in-
- (a) New Delhi
  - (b) Punjab
  - (c) Gujarat
  - (d) Uttar Pradesh
43. Heavy draft of a disc plough is due to-
- (a) Blunt disc
  - (b) Furrow too deep
  - (c) Loose bearing
  - (d) Inadequate tractor horsepower
44. For safe storage of rice grain, seed moisture content should be-
- (a) 6-8%
  - (b) 11-12%
  - (c) 14-16%
  - (d) 16-18%
45. In a seed-cum-fertilizer drill, the function of the fluted roller mechanism is to-
- (a) Regulate seed and fertilizer rate
  - (b) Break soil clods
  - (c) Level the seedbed
  - (d) Spray fertilizers
46. The materials that is left by the harvesting machine in row is called-
- (a) Swath
  - (b) Stubble
  - (c) Straw
  - (d) Residue

47. Which of the following plough is mainly used for breaking hard pan and for deep ploughing with less disturbance to the top layers?
- (a) Disc plough (b) Mouldboard plough  
(c) Chisel plough (d) Ridge plough
48. As of recent estimates, the average farm power availability in India is approximately
- (a) 1.2 kW/ha (b) 2.5 kW/ha  
(c) 5.0 kW/ha (d) 6.5 kW/ha+
49. What is the disc angle of a good plough?
- (a) 35-38° (b) 42-45°  
(c) 54-57° (d) 59-62°
50. Vertical suction of a plough influences-
- (a) Pulverization (b) Width of cut  
(c) Depth of cut (d) Direction of pull

**SECTION - B (Conventional Type) (100 Marks)**

*This Section should be answered only on the Answer Sheet provided.*

*Marks for each question is indicated against it.*

*Attempt all questions.*

1. Define extension education. Give an account of different methods of extension teaching. (2+6=8)
2. Briefly discuss the role of women in agriculture. Suggest strategies to improve women's participation in agricultural extension. (3+5=8)
3. Explain the importance of extension education in rural development. (4)
4. Explain the concept of a farming system. Write briefly about different types of farming systems according to value of produce or income. (2+6=8)
5. What is agricultural credit, and why is it essential for farmers? Explain the "4 R's" and "5 C's" of credit analysis in agriculture? (2+6=8)
6. Describe the impact of WTO policies on Indian agriculture in brief. (4)
7. Elaborate the different sources of air pollution. Explain the agricultural pollution caused by fertilizer and pesticides. (7+5=12)
8. Define greenhouse gases and their role in global warming. Discuss adaptation and mitigation strategies for climate change. (4+4=8)
9. Describe the key factors considered when designing the layout of a food processing plant. Discuss how a well-planned layout can improve productivity and reduce operational costs. (3+3=6)
10. Give an account of different methods of food preservation. Discuss the different ways to manage the waste from fruits and vegetables. (6+8=14)
11. Discuss the role and the problems associated with farm mechanization in Indian Agriculture. (5+5=10)
12. Differentiate between primary and secondary tillage. Describe two types of primary tillage equipment and their specific functions. (2+3=5)
13. Briefly explain the implements used for hill agriculture. (5)

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