IBPS SO Agriculture Field Officer (AFO) Mains 2023 (Memory Based)

Q1. Which type of organism thrives in high organic substrate conditions?
(a) Autotrophs
(b) Heterotrophs
(c) Biotroph
(d) Aerobic
(e) Autochthonous

Q2. What is the typical oestrous cycle duration for ewes?
(a) 20 (18-24 days)
(b) 21 (20-25 days)
(c) 15 (14-18 days)
(d) 10 (6-14 days)
(e) 16 (14-19 days)

Q3. What percentage of male plants is found in dioecious types of papaya?
(a) 10
(b) 20
(c) 15
(d) 25
(e) 30

Q4. What is the composition of loam soil in terms of sand, silt, and clay?
(a) Equal percentage of sand, silt, and clay
(b) Equal proportion of sand, silt, and clay
(c) Equal properties of sand, silt, and clay
(d) No relation with sand, silt, and clay
(e) Dominated by sand, silt, and clay

Q5. Where is the ICAR Central Institute of Agricultural Engineering located?
(a) Ranchi
(b) Kolkata
(c) Kanpur
(d) Hyderabad
(e) Bhopal

Q6. For determining water requirements, the drum head culture technique is used for which crop?
(a) Wheat
(b) Rice
(c) Potato
(d) Jute/Maize
(e) Rapeseed

Q7. Which microorganism or biopesticide causes symptoms similar to caterpillar wilt on plants?
(a) Bacillus thuringiensis
(b) Nuclear Polyhedrosis Virus
(c) Beauveria bassiana
(d) Bacillus sphaericus
(e) Paecilomyces lilacinus

Q8. Phosphate-solubilizing bacteria (PSB) are used to enhance the availability of which nutrient?
(a) Nitrogen
(b) Potassium
(c) Phosphorus
(d) Calcium
(e) Sulphur/Zinc

Q9. What is the advanced stage of gully erosion where large portions of soil are transported?
(a) Sheet
(b) Rill
(c) Ravine
(d) Riverbank erosion
(e) Splash erosion

Q10. What is the subvention rate for loans above ₹3 lakh and up to ₹5 lakh under the scheme during FY 2022-23?
(a) 1.5%
(b) 4%
(c) 2%
(d) 5%
(e) 3%

Q11. What is the term for woodland and widely spaced trees covered by grasses in a hot climate?
(a) Mangrove forest
(b) Savannah
(c) Boreal forest
(d) Cloud forest
(e) Subtropical Forest

Q12. What is the fat content present in Double Tone Milk?
(a) 3%
(b) 2%
(c) 1.5%
(d) 2.5%
(e) 3.5%

Q13. Muga silkworm feeds on which plants?
(a) Morus alba
(b) Terminalia arjuna
(c) Machilus bombycina
(d) Bombax ceiba
(e) Ricinus communis

Q14. Gibberellin was first isolated from which organism?
(a) Fungus
(b) Virus
(c) Bacteria
(d) Mycoplasma
(e) BGA

Q15. The Journal of Plant Nutrition is published by?
(a) Indian Soil Science Society
(b) American Society of Agronomy
(c) Taylor and Francis Limited
(d) Oxford Academic Journal
(e) Organic Institute

Q16. What is the unit of crop water use efficiency?
(a) kg/ha/mm
(b) gm/ha/m
(c) Kg/hac/cm
(d) mm/kg
(e) kg/ha

Q17. In soil, both organic and inorganic colloids suspended in water carry a charge of?
(a) Neutral
(b) Positive
(c) Negative
(d) No
(e) Optimistic

Q18. Arka Puneet, a variety of mango resistant to spongy tissue and producing oval-shaped fruit, is developed by crossing?
(a) Dassehari × Neelum
(b) Alphonso × Banganapalli
(c) Ratna × Alphonso
(d) Neelum × Alphonso
(e) Banganapalli × Alphonso

Q19. Which is a non-protein nitrogen component found in fish?
(a) TMAO
(b) Collagen
(c) Myosin
(d) Typson
(e) Acetone

Q20. Which type of soil contains high organic content and humus?
(a) Peat Soil
(b) Red Soil
(c) Laterite Soil
(d) Arid Soil
(e) Dessert Soil

Q21. Leaf area index is measured by which instrument?
(a) Propeller meter
(b) Ceptometer
(c) Orifice meter
(d) Lux meter
(e) Air flow meter

Q22. Lordosis disease in fish is caused by the deficiency of?
(a) Vit B12
(b) Vit C
(c) Vit B3
(d) Vit D
(e) Vit B2

Q23. For the very first time Artificial Insemination in India was introduced by?
(a) Dr. Sampath Kumaran
(b) P Bhattacharya
(c) Dr. G Choudhary
(d) Elias Ivanoff
(e) G C Banerjee

Q24. Which of the following is the hybrid variety of apple made by crossing Red Delicious × Ambri, which is colorful and sweet in taste and has good shelf life?
(a) Sunheri
(b) Ambroyal
(c) Lal Ambri
(d) Ambrich
(e) Chaubatia Anupam

Q25. Pusa Jai Kisan is a variety of?
(a) Mustard
(b) Lentil
(c) Rice
(d) Wheat
(e) Maize

Q26. In which demonstration type is the method of doing something shown to farmers (like broadcasting, sowing, grafting) to explain and motivate them to adopt new techniques?
(a) Extension education
(b) Front Line demonstration
(c) Method demonstration
(d) Result demonstration
(e) Farm and Home visit

Q27. Which of the following is true about the limit of the KCC (Kisan Credit Card) scheme?
(a) Scale of finance + threshold operational holding + 5% for post-harvest loss
(b) Scale of finance + threshold operational holding + 10% for family expenses
(c) Scale of finance + threshold operational holding + 10% for family expense + 5%/20% for one more expense + Crop insurance
(d) Scale of finance + Operational holding + 10% for farm asset management + 5%/20% for one more expense + Crop insurance
(e) Scale of finance for the crop × Extent of area cultivated + 10% of limit towards post-harvest + 20% of limit towards repairs and maintenance expenses of farm assets + crop insurance

Q28. In Minimum Support Price (MSP), CACP considers A2+FL cost for return. What does FL indicate?
(a) Comprehensive cost of rent of own land
(b) Interest on own capital
(c) Future loss because of uncertainties
(d) Wages taken as labour for his own family members
(e) Comprehensive cost of leased land

Q29. Vanaraja chicken variety was developed by which ICAR Directorate of Poultry Research?
(a) CARI, Izzatnagar
(b) DPR, Hyderabad
(c) KVAF, Bangalore
(d) CPBF, Mumbai
(e) CPBF, Chandigarh

Q30. Laboratory testing under DPPS is approved by which autonomous body under ISO/IEC 17011?
(a) ICAR
(b) NABL laboratory certification
(c) National Horticultural Board
(d) NCIPM
(e) National accreditation for testing and calibrating laboratories

Q31. Which of the following inoculum, when cultured in a laboratory, can be used to increase the availability of Phosphorous in the soil?
(a) Azolla
(b) Azospirillum
(c) Azotobacter
(d) Pseudomonas striata
(e) Anabaena

Q32. For Egg shell formation, which nutrient is essential?
(a) Ca
(b) P
(c) Mg
(d) Fe
(e) K

Q33. What is the electrical conductivity of soil in ds/m under good management and drainage practices, which gives satisfactory production?
(a) 3 to 4
(b) 0.25-0.50
(c) 0.5-2
(d) 0.75-2.25
(e) 0.10-0.25

Q34. The phenomenon by which heterozygous individuals are phenotypically distinguishable from homozygous types is called?
(a) Genetic recombination
(b) Incomplete dominance
(c) Heritability
(d) Heredity
(e) Homozygous

Q35. Irradiation (or Gamma radiation) amount required in kGy to stop the sprouting of potato and reduce solanine production is?
(a) 0.03 kGy
(b) 0.1 kGy
(c) 0.01 kGy
(d) 0.25 kGy
(e) 0.30 kGy

Q36. What is the germination percentage required for the hybrid seed production of tomato?
(a) 80%
(b) 85%
(c) 70%
(d) 90%
(e) 75%

Q37. What is the right time for harvesting Button mushrooms?
(a) Lower part gets round, and mushroom turns brown
(b) When the mushroom attains egg size
(c) When 30-35 cm head with double height of pedicle and twice the height of stem
(d) Diameter gets bigger 2-3 times than the lower stem
(e) Harvesting is done at button stage

Q38. GMO food developed using genetic engineering or having microorganisms in it is known as?
(a) Organic food
(b) Novel food
(c) Genetically modified or Engineered food
(d) Health food
(e) Conventional food

Q39. For AI (Artificial Insemination), the semen is collected and stored at -196°C using which of the following?
(a) Liquid nitrogen
(b) Burst ice
(c) Cold ice
(d) Helium Nitrogen
(e) Sodium

Q40. Who has been appointed as the convenor of the Sub-Committees (SSCs) of the District Consultative Committee (DCC) for the regulation of credits?
(a) LDO of Reserve Bank of India
(b) DDM of NABARD
(c) Lead District Manager
(d) District Collector
(e) CEO of Zilla Parishad

Q41. Marigold is used as a trap crop for which among the following?
(a) Jassids
(b) Thrips
(c) Nematode
(d) Aphid
(e) Whitefly

Q42. What is the maximum limit per borrower in the Agriculture sector under priority sector lending by banks, NBFC (other than MFIs)?
(a) 10 lakhs
(b) 15 lakhs
(c) 20 lakhs
(d) 25 lakhs
(e) 5 lakhs

Q43. What are the symptoms of Brucellosis disease in goats?
(a) Abortion in late pregnancy
(b) Abdomen pain and Loss of appetite
(c) Abortion or delivery of immature baby calf
(d) Swollen udder and Pain in udder and yield reduction
(e) Fever, nasal discharge and coughing

Q44. Convulsions of the mammary gland and cessation of lactation and shrinkage of alveolus is termed as?
(a) Galatopoiesis
(b) Involution
(c) Galactophore
(d) Galectoxidase
(e) Lacteal

Q45. Which toxic compound is present in Cotton seed meal?
(a) Free Gossypol
(b) Marmeiosin
(c) HCN
(d) Aflatoxin
(e) Phytate

Q46. Mostly in Maharashtra and Karnataka, most adopted sugarcane practice planted in October-November, and its life is 15–16 months is called?
(a) Ratoon
(b) Suru
(c) Eksali
(d) Adsali
(e) Pre Seasonal

Q47. Which system is used for training in seedless grapes, which uses the advantage of the bower system but doesn't use its disadvantages?
(a) Y trellis and gabble
(b) Espalier
(c) Overhead and Kniffin
(d) Telephone and Kniffin
(e) Kniffin and V

Q48. The ratio of Yellow stem borer and Wolf spider (Predator) for the IPM management of Rice is?
(a) 1:5
(b) 1:10
(c) 1:15
(d) 1:20
(e) 10:1

Q49. What is the percentage contribution of the livestock sector to the agriculture GVA in India?
(a) 30.23 %
(b) 28.65%
(c) 33%
(d) 24%
(e) 25%

Q50. Which is the branch of meteorology in which forecast is done for crop, tillage, and animal husbandry?
(a) Synoptic meteorology
(b) Agriculture meteorology
(c) Dynamic meteorology
(d) Statistical meteorology
(e) Physical meteorology

Q51. The lignin and polysaccharide mixture which is left undigested in the stomach of the animal is called?
(a) Crude fibre
(b) Crude protein
(c) Prostaglandin
(d) Tri glycerides
(e) Glycerol

Q52. When rice seedlings are grown in nurseries, which implement is used to establish rice seedlings in puddled soil condition?
(a) Hand hoe
(b) Seed Drill
(c) Transplanter
(d) Seed cum fertilizer
(e) Planter

Q53. Modified stems grow horizontally on or below the surface with nodes, internodes, and scars of leaves. This is called?
(a) Runner
(b) Offshoot
(c) Sucker
(d) Rhizome
(e) Tuber

Q54. Which selective herbicide is commonly used for pre and post-emergence weed control in grass-like plants such as rice and maize or broadleaf crops?
(a) 2,4 D
(b) Glyphosate
(c) Atrazine
(d) Butachlor
(e) Pendimethalin

Q55. Fig is more susceptible to sunscald. It can be managed by?
(a) Training and girdling
(b) By some chemicals
(c) Maintaining the canopy and applying lime on exposed trunk
(d) Spray of GA3
(e) Application of potassium

Q56. What is the role of the elements like Fe, Mn, Zn, Cu, Mo other than K, Ca, and Mg in plants?
(a) Energy exchange, transfer, and bonding
(b) Regulators and carriers
(c) Chemical reaction activation enzymes
(d) Energy storage, carriers, and electron transfer
(e) Enzyme activation and carrier

Q57. What type of culture is used for producing triploid plants?

(a) Endosperm culture
(b) Callus culture
(c) Shoot Meristem/Embryo culture
(d) Pollen culture
(e) Apical meristem

Q58. It is the most notorious pest of cole crops, which almost defoliates plants by eating?

(a) Diamond back moth
(b) Leaf Webber
(c) Stripped beetle
(d) Stem borer
(e) Painted bug

Q59. The amount of water vapor that is present in the environment as opposed to how much water vapor it can hold in terms of percentage is called?

(a) Relative humidity
(b) Saturation water vapor pressure
(c) Vapor pressure deficit
(d) Dew point

Solutions

S1. (b): Heterotrophs proliferate in high organic substrate conditions because they rely on organic matter as a source of energy and nutrients.

S2. (e): The oestrous cycle of an ewe lasts around 16 days, ranging between 14-19 days. It is the reproductive cycle where the ewe becomes receptive to breeding.

S3. (a): In dioecious papaya plants, around 10% of the population is male, while the rest are either female or hermaphrodite plants.

S4. (b): Loam soil contains an equal proportion of sand, silt, and clay, making it ideal for agriculture due to its balanced texture and fertility.

S5. (e): The ICAR Central Institute of Agricultural Engineering is located in Bhopal, Madhya Pradesh.

S6. (b): The drum head culture technique is specifically used to determine the water requirements of rice, as it helps monitor water usage efficiently in paddy fields.

S7. (b): The Nuclear Polyhedrosis Virus (NPV) is a biopesticide that infects caterpillars, causing symptoms similar to wilt in plants, ultimately leading to their death.

S8. (c): PSB help solubilize phosphorus in the soil, making it readily available to plants for growth and development.

S9. (c): The ravine stage of gully erosion is the most advanced, where large amounts of soil are removed and transported, particularly in alluvial soils.

S10. (d): For loans exceeding ₹3 lakh and up to ₹5 lakh, banks are subvented at a uniform rate of 5% per annum to support credit availability at lower interest rates.

S11. (b): Savannah refers to a landscape characterized by widely spaced trees and grasses, typically found in hot climates. It is a common biome in regions like Africa, South America, and Australia.

S12. (c): Double tone milk contains 1.5% fat. It is a low-fat milk option achieved by further processing toned milk to reduce fat content while maintaining nutritional value.

S13. (c): Machilus bombycina (commonly called Som) is the primary food plant of the Muga silkworm, which is cultivated primarily in Assam for producing golden-colored silk.

S14. (a): Gibberellin was first isolated from a fungus called *Gibberella fujikuroi*. This plant hormone promotes growth, seed germination, and elongation of plant stems.

S15. (c): The Journal of Plant Nutrition is published by Taylor and Francis Limited, a global publisher that specializes in academic research and scholarly journals.

S16. (a): Crop water use efficiency is measured in terms of kg/ha/mm, which signifies the yield obtained (kilograms per hectare) per unit of water used (in millimeters).

S17. (c): In soil, organic and inorganic colloids (like clay and humus) suspended in water generally carry a negative charge. This property allows them to attract and hold positively charged ions (cations).

S18. (c): Arka Puneet is a mango variety developed through a cross between Ratna and Alphonso. It is known for its resistance to spongy tissue and produces high-quality, oval-shaped fruits.

S19. (a): TMAO (Trimethylamine N-oxide) is a non-protein nitrogenous compound found in fish. It helps protect fish tissues from osmotic stress in seawater environments.

S20. (a): Peat soil contains a high amount of organic matter and humus. It forms in waterlogged conditions where decomposition is slow, leading to the accumulation of organic material.

S21. (b): Leaf Area Index (LAI) is a measure of the leaf surface area per unit ground area. A Ceptometer is specifically used to measure the Leaf Area Index (LAI) by assessing the amount of light intercepted by plant canopies.
It works on the principle of measuring photosynthetically active radiation (PAR) under the canopy and in open space to estimate the leaf area and its density. Ceptometers are widely used in agricultural and ecological research to evaluate plant growth, productivity, and canopy structure.

S22. **(b):** Lordosis in fish is caused due to a deficiency of Vitamin C. Vitamin C plays a critical role in collagen synthesis, and its deficiency leads to skeletal deformities like Lordosis.

S23. **(a):** Artificial Insemination (AI) in India was first introduced by Dr. Sampath Kumaran. AI has significantly contributed to genetic improvement in cattle and enhanced milk productivity.

S24. **(c):** Lal Ambri is the hybrid variety developed by crossing Red Delicious and Ambri. It is known for its vibrant color, sweet taste, and extended shelf life.

S25. **(a):** Pusa Jai Kisan is a high-yielding variety of Mustard. It was developed to enhance productivity and improve disease resistance in mustard crops.

S26. **(c):** In a Method Demonstration, a method of doing something is demonstrated practically to farmers, such as grafting, sowing, or broadcasting, to help them understand and adopt the technique.

S27. **(e):** The correct limit for the Kisan Credit Card (KCC) scheme includes scale of finance, extent of area cultivated, and additional components like post-harvest losses, repair expenses, and crop insurance, as described in option (e).

S28. **(d):** In MSP calculation, FL stands for Family Labour, which includes the wages taken as labor for the farmer's own family members who contribute to farm activities.

S29. **(b):** Vanaraja chicken was developed by the Directorate of Poultry Research (DPR), Hyderabad. It is a dual-purpose bird suitable for both meat and egg production in rural areas.

S30. **(b):** NABL (National Accreditation Board for Testing and Calibration Laboratories) provides accreditation for laboratory testing under the DPPS. NABL operates as per ISO/IEC 17011 standards for evaluating competence in laboratories.

S31. **(d):** Pseudomonas striata is a phosphate-solubilizing bacteria (PSB) that enhances the availability of phosphorus in the soil by breaking down insoluble phosphates into absorbable forms for plants.

S32. **(a):** Calcium (Ca) is essential for eggshell formation. It is required in large quantities as eggshells are composed of calcium carbonate, providing strength and structure to the shell.

S33. **(c):** The optimal electrical conductivity (EC) of soil ranges between 0.5-2 ds/m. Soils with EC within this range support healthy crop growth under good management and drainage practices.

S34. **(b):** Incomplete dominance occurs when heterozygous individuals exhibit an intermediate phenotype that is distinguishable from homozygous dominant or recessive types.

S35. **(b):** 0.1 kGy gamma radiation is used to inhibit sprouting in potatoes. This process prevents solanine accumulation, which can be toxic if consumed in large quantities.

S36. **(d):** The required germination percentage for hybrid seed production of tomato is 90% to ensure high-quality seeds with good vigor and viability.

S37. **(e):** Button mushrooms are harvested at the button stage, when they are small, firm, and have not yet opened their caps. This stage ensures the best quality and market value.

S38. **(c):** Genetically Modified Organisms (GMO) foods are developed using genetic engineering techniques to introduce new traits, such as pest resistance or increased nutrition, into crops.

S39. **(a):** Liquid nitrogen is used to store semen for Artificial Insemination (AI) at ultra-low temperatures of -196°C, ensuring the preservation of sperm viability for extended periods.

S40. **(c):** The Lead District Manager (LDM) is appointed as the convenor of the Sub-Committees (SSCs) of the District Consultative Committee (DCC) for regulating credits. The LDM plays a crucial role in ensuring smooth credit flow and implementing various government-sponsored schemes in coordination with banks.

S41. **(c):** Marigold is widely used as a trap crop for nematodes. Its roots release certain chemicals that attract nematodes, which helps in controlling their population in agricultural fields.

S42. **(a):** Under priority sector lending norms, the maximum limit per borrower in the Agriculture sector is set at ₹10 lakhs for loans provided by banks and NBFCs (other than Microfinance Institutions).

S43. **(a):** Brucellosis in goats is characterized by abortion in late pregnancy. It is a bacterial infection caused by *Brucella melitensis*, affecting reproduction and causing economic losses in livestock farming.

S44. **(b):** Involution is the process where the mammary gland shrinks and ceases milk production after lactation ends. It is a natural physiological process that follows the cessation of milk removal.

S45. **(a):** Cotton seed meal contains free gossypol, a toxic compound that can be harmful to livestock when consumed in large quantities. Proper processing helps reduce gossypol content in the feed.

S46. **(b):** The Suru sugarcane planting system is predominantly practiced in Maharashtra and Karnataka during October-November, with a crop duration of 15–16 months, ensuring high productivity.

S47. **(e):** The Kniffin and V system is used for training seedless grapes, providing the advantage of the bower system while avoiding its disadvantages, such as excessive shading.

S48. **(c):** For Integrated Pest Management (IPM) in rice, the ideal ratio of Yellow stem borer to Wolf spider (predator) is 1:15, which helps control the pest population effectively.

S49. **(a):** The livestock sector contributes approximately 30.23% to the Gross Value Added (GVA) in Indian agriculture. It is a significant contributor to rural incomes and food security.

S50. **(b):** Agricultural meteorology, or agrometeorology, focuses on weather and climate forecasts for agriculture, including crop growth, soil moisture, irrigation, and animal husbandry. It helps farmers make informed decisions related to farming practices.

S51. **(a):** Crude fibre is the indigestible portion of plant material, mainly composed of lignin, cellulose, and hemicellulose. It provides roughage in animal feed, aiding digestion and bowel movement.

S52. **(c):** A transplanter is a mechanical device used to transplant rice seedlings from nurseries to puddled fields. It improves efficiency and reduces labor compared to manual transplantation.

S53. **(d):** Rhizomes are underground horizontal stems that store nutrients and allow vegetative propagation. Examples include ginger and turmeric.

S54. **(d):** Butachlor is a pre-emergence selective herbicide used for controlling annual grasses and broadleaf weeds in crops like rice and maize.

S55. **(c):** Sunscald in figs can be managed by maintaining a canopy to provide shade and applying lime on the exposed trunk to reflect sunlight and reduce heat damage.

S56. **(c):** Elements like Fe, Mn, Zn, Cu, and Mo act as micronutrients in plants, primarily functioning as enzyme activators for chemical reactions critical to plant metabolism.

S57. **(a):** Endosperm culture involves culturing triploid endosperm tissues to produce triploid plants, which are often sterile and used for seedless fruit production.

S58. **(a):** The diamondback moth (Plutella xylostella) is a major pest of cole crops like cabbage and cauliflower, causing extensive leaf defoliation.

S59. **(a):** Relative humidity is the ratio of the current water vapor amount in the air to the maximum water vapor the air can hold at a given temperature, expressed as a percentage.