

CUET PG 2024 Agro forestry Question Paper with Solutions

Time Allowed :1 Hour 45 Mins	Maximum Marks :300	Total Questions :75
------------------------------	--------------------	---------------------

General Instructions

Read the following instructions very carefully and strictly follow them:

1. The examination duration is 105 minutes. Manage your time effectively to attempt all questions within this period.
2. The total marks for this examination are 300. Aim to maximize your score by strategically answering each question.
3. There are 75 mandatory questions to be attempted in the Agro forestry paper. Ensure that all questions are answered.
4. Questions may appear in a shuffled order. Do not assume a fixed sequence and focus on each question as you proceed.
5. The marking of answers will be displayed as you answer. Use this feature to monitor your performance and adjust your strategy as needed.
6. You may mark questions for review and edit your answers later. Make sure to allocate time for reviewing marked questions before final submission.
7. Be aware of the detailed section and sub-section guidelines provided in the exam. Understanding these will aid in effectively navigating the exam.

1. Basic principles of ecology are:

- (A) All organisms and physical environment are interdependent with each other.
- (B) Each organism has no limit of tolerance.
- (C) The nature strives for greater diversity.
- (D) The environment is holocentric.

Choose the correct answer from the options given below:

- (a) (A), (B) and (D) only.
- (b) (A), (B) and (C) only.
- (c) (A), (B), (C) and (D).
- (d) (A), (C) and (D) only.

Correct Answer: (d) (A), (C) and (D) only.

Solution: The basic principles of ecology state that all organisms are interdependent with the physical environment, and the environment strives for greater diversity while remaining holocentric. However, the claim that organisms have no limit of tolerance is incorrect.

 Quick Tip

Understanding the basic principles of ecology helps to analyze the interactions between organisms and their environment, which is crucial for sustainable development.

2. Arrange anatomical features of stem from surface to inner layers:

- (A) Vascular bundles
- (B) Epidermis
- (C) Hypodermis
- (D) Thick cuticle

Choose the correct answer from the options given below:

- (a) (A), (B), (C), (D).
- (b) (D), (B), (C), (A).
- (c) (B), (A), (D), (C).
- (d) (C), (B), (D), (A).

Correct Answer: (b) (D), (B), (C), (A).

Solution: The correct order of the anatomical features of a stem is: Thick cuticle (outermost layer), Epidermis (protective layer), Hypodermis (support tissue), and Vascular bundles (innermost transport system).

 Quick Tip

Understanding the arrangement of anatomical features helps in identifying plant structures and their functions.

3. Arrange growth stages of wheat from beginning to end of life cycle:

- (A) CRI
- (B) Dough
- (C) Flowering
- (D) Boot

Choose the correct answer from the options given below:

- (a) (A), (D), (C), (B).
- (b) (A), (B), (C), (D).
- (c) (B), (A), (D), (C).
- (d) (C), (B), (D), (A).

Correct Answer: (a) (A), (D), (C), (B).

Solution: The correct order of growth stages in wheat is: CRI (Crown Root Initiation), Boot (emergence of the inflorescence), Flowering (reproductive phase), and Dough (grain maturation phase).

💡 Quick Tip

Recognizing growth stages of crops helps optimize agricultural practices for better yield.

4. Arrange the following activities in the chronological order of their starting year in India:

- (A) Pradhan Mantri Fasal Bima Yojana (PMFBY)
- (B) Production Linked Incentive Scheme for Food Processing Industry (PLISFPI)
- (C) Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)
- (D) Pradhan Mantri Matsya Sampada Yojana (PMMSY)

Choose the correct answer from the options given below:

- (a) (A), (D), (C), (B).
- (b) (A), (B), (C), (D).
- (c) (B), (A), (D), (C).
- (d) (C), (B), (D), (A).

Correct Answer: (a) (A), (D), (C), (B).

Solution: The chronological order of these activities is: PMFBY (2016), PMMSY (2020), PMGKAY (2020), and PLISFPI (2021). These schemes were launched to enhance agriculture, fisheries, and food processing industries.

💡 Quick Tip

Chronological knowledge of government schemes helps in understanding their impacts and objectives.

5. Planning Commission divided India into how many agroclimatic zones?

- (a) 62
- (b) 15
- (c) 126
- (d) 67

Correct Answer: (b) 15.

Solution: The Planning Commission divided India into 15 agroclimatic zones to optimize agricultural practices based on climatic and geographical conditions.

 Quick Tip

Knowledge of agroclimatic zones is crucial for implementing region-specific agricultural strategies.

6. Plant physiological and biochemical response to elevated CO is known as

- (a) CO₂-fertilization
- (b) CO₂-humification
- (c) CO₂-nitrification
- (d) CO₂-fertilization

Correct Answer: (d) CO-fertilization.

Solution: CO-fertilization refers to the enhancement of plant growth and productivity due to increased atmospheric CO concentrations. It plays a significant role in increasing crop yields under certain conditions.

 Quick Tip

Elevated CO levels can enhance photosynthesis, improving plant growth and crop yields.

7. Which cropping system occupies the maximum area in India?

- (a) Rice - wheat
- (b) Rice - rice
- (c) Maize - chickpea
- (d) Maize - wheat

Correct Answer: (a) Rice - wheat.

Solution: The rice-wheat cropping system is the most common and widely practiced in India, covering the largest area. It is essential for food security and contributes significantly to the national economy.

 Quick Tip

Rice-wheat rotation is a dominant cropping system, especially in the Indo-Gangetic plains of India.

8. Match List I with List II:

LIST I (Potential Cropping System)	LIST II (Rainfall in mm)
A. Double cropping	I. ≤ 300
B. No Crop	II. 301-700
C. Single cropping	III. 701-1100
D. Inter cropping	IV. ≥ 1100

Choose the correct answer from the options given below:

- (a) (A) - (III), (B) - (I), (C) - (IV), (D) - (II)
- (b) (A) (III), (B) - (I), (C) - (II), (D) - (IV)
- (c) (A) - (IV), (B) - (I), (C) - (III), (D) - (II)
- (d) (A) - (IV), (B) - (I), (C) - (II), (D) - (III)

Correct Answer: (d) (A) - (IV), (B) - (I), (C) - (II), (D) - (III).

Solution: The matchings are based on the average rainfall required for each cropping system. Double cropping requires high rainfall (IV ≥ 1100 mm), no crop is suited for arid areas with ≤ 300 mm rainfall (I), single cropping requires moderate rainfall (II), and intercropping works well in areas with moderate to high rainfall (III).

💡 Quick Tip

Understanding rainfall requirements helps in selecting the right cropping system for a region.

9. Which among the following is a positional average?

- (a) Mean
- (b) Median
- (c) Mode
- (d) Midrange

Correct Answer: (b) Median.

Solution: The median is the positional average as it represents the middle value of a dataset when arranged in ascending or descending order. It divides the dataset into two equal halves.

💡 Quick Tip

The median is less sensitive to extreme values, making it a better measure of central tendency when dealing with skewed data.

10. Which one is not the benefit of agroforestry?

- (a) Efficient recycling of nutrients
- (b) Improvement in microclimate

- (c) Reduction of pressure on forest
- (d) Green water uptake

Correct Answer: (d) Green water uptake.

Solution: Agroforestry offers numerous benefits, including efficient nutrient recycling, improving the microclimate, and reducing pressure on forests. However, green water uptake, referring to water stored in soil, is not a direct benefit of agroforestry.

 Quick Tip

Agroforestry helps improve land productivity, restore ecological balance, and reduce deforestation.

11. Which programme has been launched as a part of the Golden Jubilee celebration of ICAR?

- (a) Lab to Land Programme
- (b) National Demonstration Project
- (c) Training and Visit System
- (d) Integrated Rural Development Programme

Correct Answer: (a) Lab to Land Programme.

Solution: The "Lab to Land Programme" was launched by ICAR as part of its Golden Jubilee celebrations to bridge the gap between research and its application in agriculture.

 Quick Tip

This programme aims to enhance agricultural productivity by transferring research findings directly to farmers.

12. Conversion of 'central leaf into shiny tubular structure' is associated with which of the following pest of rice crop?

- (a) Gall midge
- (b) Gundi bug
- (c) Stem borer
- (d) Case worm

Correct Answer: (a) Gall midge.

Solution: The rice gall midge is known to convert the central leaf of the rice plant into a shiny tubular structure, which is a distinct characteristic of the damage caused by this pest.

 Quick Tip

The rice gall midge is a major pest in rice-growing areas and can significantly reduce yields if not controlled.

13. Which of the following facts are associated with khaira disease of rice?

- (A). Appearance of white mid rib
- (B). Symptoms appear between two and four weeks after transplanting
- (C). Stunted growth
- (D). Dead hearts

Choose the correct answer from the options given below:

- (a) (A), (B) and (D) only.
- (b) (A), (B) and (C) only.
- (c) (A), (B), (C) and (D).
- (d) (B), (C) and (D) only.

Correct Answer: (b) (A), (B) and (C) only.

Solution: Khaira disease of rice is characterized by the appearance of a white midrib, symptoms that appear between two and four weeks after transplanting, and stunted growth. Dead hearts are also observed in some cases, but it is not a primary symptom of the disease.

 Quick Tip

Khaira disease can be controlled by applying zinc sulfate to the soil, as zinc deficiency is a major cause.

14. Identify the facts associated with wilt in chickpea crop:

- (A). Occurs 3 weeks after sowing
- (B). Weakening and dying of plants
- (C). Treated seed with Azotobacter - PSB can control wilt
- (D). Dark colouration of affected portions

Choose the correct answer from the options given below:

- (a) (A), (B) and (D) only.
- (b) (A), (B) and (C) only.
- (c) (B), (C) and (D).
- (d) (A), (C) and (D) only.

Correct Answer: (a) (A), (B) and (D) only.

Solution: Wilt in chickpea typically occurs about 3 weeks after sowing, leading to weakening

and dying of plants. Seed treatment with Azotobacter and PSB helps control the disease. Dark coloration is not a characteristic symptom of wilt in chickpeas.

 Quick Tip

Seed treatment with bio-fertilizers like Azotobacter and PSB helps reduce wilt incidence in chickpea crops.

15. Match List I with List II:

LIST I (Disease)	LIST II (Organism)
A. Loose smut	I. Nevossia
B. Karnal bunt	II. Puccinia
C. Rust	III. Erysiphe
D. Powdery mildew	IV. Ustilago

Choose the correct answer from the options given below:

- (a) (A) - (I), (B) - (II), (C) - (III), (D) - (IV)
- (b) (A) - (IV), (B) - (I), (C) - (II), (D) - (III)
- (c) (A) - (IV), (B) - (I), (C) - (III), (D) - (II)
- (d) (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Correct Answer: (b) (A) - (IV), (B) - (I), (C) - (II), (D) - (III).

Solution: Loose smut is caused by Ustilago.

Karnal bunt is caused by Nevossia.

Rust is caused by Puccinia.

Powdery mildew is caused by Erysiphe.

 Quick Tip

Correct identification of plant diseases and their causal organisms is crucial for effective disease management in agriculture.

16. Match List I with List II:

LIST I (Plant nutrient)	LIST II (Scientist associated)
A. Carbon from air	I. Justus V Liebig
B. Carbon from soil	II. Francis Bacon
C. Phosphorous from soil	III. Bossingault
D. Water is the principle element of vegetation	IV. Humphrey Davy

Choose the correct answer from the options given below:

- (a) (A) - (III), (B) - (IV), (C) - (I), (D) - (II)
- (b) (A) - (IV), (B) - (III), (C) - (II), (D) - (I)
- (c) (A) - (I), (B) - (II), (C) - (IV), (D) - (III)
- (d) (A) - (III), (B) - (IV), (C) - (II), (D) - (I)

Correct Answer: (a) (A) - (III), (B) - (IV), (C) - (I), (D) - (II).

Solution: The scientific understanding of plant nutrients involves several key historical figures. Bossingault was instrumental in demonstrating that plants derive significant amounts of carbon from the air. Humphrey Davy's research contributed to understanding that plants can also source carbon from the soil, complementing the air carbon uptake. Francis Bacon's studies on phosphorus highlighted its absorption from the soil, a crucial element for plant development. Lastly, Justus V Liebig advocated that water is a principal element of vegetation, necessary for plant life.

 Quick Tip

Understanding the contributions of these scientists helps in appreciating the foundational concepts of plant nutrition and the importance of each nutrient's source.

17. How many essential nutrients are required for plant growth and development?

- (a) 14
- (b) 17
- (c) 18
- (d) 20

Correct Answer: (c) 18.

Solution: There are 18 essential nutrients that plants require for growth and development. These include carbon, hydrogen, oxygen (from air and water), and 15 mineral nutrients from the soil. Essential nutrients support various physiological functions such as photosynthesis, nutrient absorption, and energy production.

 Quick Tip

Regular soil testing and proper fertilization can ensure that plants receive all essential nutrients in the right proportions, optimizing health and yield.

18. Deficiency symptoms of phosphorus are:

- (A). Purple orange colour of older leaves
- (B). New leaves turned to white
- (C). Poor root system
- (D). Reduced tillering in cereals

Choose the correct answer from the options given below:

- (a) (A), (B), (C) and (D)
- (b) (A), (B) and (C) only.
- (c) (A), (C) and (D) only.
- (d) (A) and (C) only.

Correct Answer: (d) (A) and (C) only.

Solution: Phosphorus deficiency primarily manifests as a purple or orange discoloration of older leaves due to the breakdown of sugars which affects phosphorus-limited photosynthesis, leading to anthocyanin accumulation. A poor root system is another classic symptom, affecting the plant's ability to absorb nutrients effectively.

 Quick Tip

Proper soil management and timely fertilization can prevent phosphorus deficiency, crucial for maintaining plant health and ensuring robust growth.

19. What is true in relation to soil fertility and productivity?

- (A). Soil fertility is the capability of soil for higher crop productivity.
- (B). Soil fertility is an inherent capacity of soil to provide essential plant nutrients in balance proportion.
- (C). Soil productivity is more complex than soil fertility.
- (D). All productive soils are fertile soils and vice-versa.

Choose the correct answer from the options given below:

- (a) (B) and (C) only.
- (b) (A), (B) and (C) only.
- (c) (A), (B), (C) and (D).
- (d) (B), (C) and (D) only.

Correct Answer: (a) (A), (B), and (C) only.

Solution: Soil fertility refers to the inherent capacity of soil to supply essential nutrients in adequate amounts and proportions for plant growth and reproduction. While fertility is an inherent quality, productivity also depends on other factors like management practices, environmental conditions, and crop choice, making it more complex.

 Quick Tip

Understanding the distinction between soil fertility and productivity can significantly enhance effective land management strategies, optimizing both yield and soil health.

20. Who proposed the essentiality criteria of nutrients for plants?

- (a) Justus V Liebig and Stohmann (1873)

- (b) Arnon and Stout (1939)
- (c) Boussingault and Brown (1887)
- (d) Birner and Lucanus (1866)

Correct Answer: (b) Arnon and Stout (1939).

Solution: Daniel Arnon and Pierre Stout proposed the essentiality criteria for plant nutrients in 1939, which established a framework for determining whether a chemical element is essential for plant growth. This work has foundational importance in the field of plant physiology and nutrition.

 Quick Tip

The criteria developed by Arnon and Stout are still used today to evaluate the essentiality of new elements discovered in plant tissues, ensuring a rigorous scientific approach to plant nutrition research.

21. Match List I with List II:

LIST I (Biochemical and physiological function)	LIST II (Associated nutrients)
A. Major constituent of plants	I. N and S
B. Involved in biochemical reactions	II. Zn and Mo
C. Free ionic state	III. P and B
D. Present as chelates	IV. Ca and Mg

Choose the correct answer from the options given below:

- (a) (A) - (I), (B) - (II), (C) - (IV), (D) - (II)
- (b) (A) - (I), (B) - (III), (C) - (II), (D) - (IV)
- (c) (A) - (I), (B) - (II), (C) - (IV), (D) - (III)
- (d) (A) - (I), (B) - (IV), (C) - (III), (D) - (II)

Correct Answer: (a) (A) - (I), (B) - (II), (C) - (IV), (D) - (II)

Solution: Major constituent of plants: Phosphorus and Boron (P and B).

Involved in biochemical reactions: Nitrogen and Molybdenum (N and Mo).

Free ionic state: Zinc and Sulfur (Zn and S).

Present as chelates: Calcium and Magnesium (Ca and Mg).

 Quick Tip

Understanding the contributions of these scientists helps in appreciating the foundational concepts of plant nutrition and the importance of each nutrient's source.

22. Sequential steps involved in mineralisation of nitrogen:

- (A). NH_4
- (B). NO_2
- (C). Protein
- (D). NO_3

Choose the correct sequence from the options given below:

- (a) (A), (B), (C), (D)
- (b) (A), (B), (D), (C)
- (c) (C), (B), (D), (A)
- (d) (C), (A), (B), (D)

Correct Answer: (c) (C), (A), (B), (D).

Solution: The correct sequence of nitrogen mineralization is:

- (A) Ammonium (NH_4) forms first,
- (B) It is then oxidized to Nitrite (NO_2),
- (D) Nitrite is further oxidized to Nitrate (NO_3),
- (C) Finally, Nitrate is utilized in the synthesis of proteins in plants.

Quick Tip

Understanding the nitrogen mineralization process is key for optimizing nitrogen management in agriculture, which helps improve crop yield and reduce nitrogen loss.

23. Forest sustainability deals with:

- (A). Integration of environmental, economic, and social principles.
- (B). Fulllest utilization of forest resources.
- (C). Satisfaction of present environmental, economic, and social needs.
- (D). Conservation of forest resources to assure the future generations' needs.

Choose the correct answer from the options given below:

- (a) (A), (B) and (D) only.
- (b) (A), (B) and (C) only.
- (c) (A), (C) and (D) only.
- (d) (A), (B), (C) and (D).

Correct Answer: (c) (A), (B), and (C) only.

Solution: Forest sustainability involves balancing the need for resources with conservation to meet the demands of both present and future generations. It integrates ecological, social, and economic factors.

 Quick Tip

Sustainable forest management ensures that we preserve the biodiversity of forests while meeting human needs, maintaining ecological balance, and promoting social and economic benefits.

24. Conservation tillage helps in:

- (A). Maximizing soil water storage
- (B). Minimizing soil erosion
- (C). Reducing energy consumption
- (D). Increasing bulk density

Choose the correct answer from the options given below:

- (a) (A), (B) and (D) only.
- (b) (A), (B) and (C) only.
- (c) (A), (B), (C) and (D).
- (d) (B), (C) and (D) only.

Correct Answer: (b) (A), (B) and (C) only.

Solution: Conservation tillage helps reduce soil erosion, reduces energy consumption by minimizing the need for tillage equipment, and prevents increases in bulk density, which could lead to soil compaction.

 Quick Tip

Adopting conservation tillage practices can lead to improved soil health, better water retention, and reduced soil erosion, ultimately benefiting agricultural productivity and sustainability.

25. Which cropping system is more sustainable in nature?

- (A). Maize - wheat
- (B). Maize - mustard
- (C). Rice - wheat
- (D). Maize - chickpea

Correct Answer: (d) Maize - chickpea

Solution: The Maize - chickpea cropping system is more sustainable due to the nitrogen-fixing ability of chickpeas, which enhances soil fertility and reduces the need for synthetic fertilizers.

 Quick Tip

Nitrogen-fixing crops like chickpeas are an important part of sustainable agricultural systems because they enhance soil fertility naturally.

26. Match List I with List II:

List I (Agroforestry definition)	List II (Associated with)
(A) Sustainable management system for land.	(I) Bartle, 1977
(B) Range land management with trees.	(II) Thomas, 1977
(C) Integration of trees, crops, and animals.	(III) Bene et al, 1977
(D) Combination of agriculture and forestry.	(IV) Nair, 1979

Choose the correct answer from the options given below:

- (a) (A) - (III), (B) - (I), (C) - (IV), (D) - (II)
- (b) (A) - (I), (B) - (III), (C) - (II), (D) - (IV)
- (c) (A) - (I), (B) - (II), (C) - (IV), (D) - (III)
- (d) (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Correct Answer: (c) (A) - (III), (B) - (I), (C) - (IV), (D) - (II)

Solution: The correct matching is based on the definitions of agroforestry and the authors associated with these definitions.

 Quick Tip

Agroforestry combines the benefits of forestry and agriculture by integrating trees, crops, and animals for sustainable land management.

27. Agricultural waste management involves the sequence of events as:

- (A). Crop and animal waste
- (B). Mineralization of nutrients
- (C). Decomposition into manures and used in crop production
- (D). Nutrient uptake by crop plants

Choose the correct answer from the options given below:

- (a) (A), (B), (C), (D)
- (b) (A), (C), (B), (D)
- (c) (A), (B), (D), (C)
- (d) (B), (C), (D), (A)

Correct Answer: (b) (A), (C), (B), (D)

Solution: The correct order of agricultural waste management is crop and animal waste, which is then mineralized into nutrients, decomposes into manures, and finally, these nutrients are uptaken by the crop plants.

 Quick Tip

Understanding the proper order of nutrient cycles in agricultural waste management helps in effective resource utilization and sustainable farming.

28. Match List I with List II:

List I (Agricultural waste)	List II (Nitrogen %)
(A) Cattle dung	(I) 1.0-1.8
(B) Poultry manure	(II) 0.6
(C) Sheep dung	(III) 0.95
(D) Horse dung	(IV) 0.70

Choose the correct answer from the options given below:

- (a) (A) - (IV), (B) - (II), (C) - (III), (D) - (I)
- (b) (A) - (I), (B) - (II), (C) - (III), (D) - (IV)
- (c) (A) - (II), (B) - (I), (C) - (IV), (D) - (III)
- (d) (A) - (II), (B) - (I), (C) - (III), (D) - (IV)

Correct Answer: (d) (A) - (II), (B) - (I), (C) - (III), (D) - (IV)

Solution: The correct matching of agricultural waste with their nitrogen percentages is based on research data from different sources.

 Quick Tip

Different types of agricultural waste have varying nitrogen content, and matching them correctly is essential for managing soil fertility.

29. The correct order of steps in resource conservation is:

- (A). Maximise retention and percolation of precipitation
- (B). Soil and water conservation measures
- (C). Management of silt
- (D). Proper storage of run-off water

Choose the correct answer from the options given below:

- (a) (A), (B), (C), (D)

- (b) (B), (A), (D), (C)
- (c) (B), (A), (C), (D)
- (d) (A), (B), (D), (C)

Correct Answer: (b) (B), (A), (D), (C)

Solution: The proper order of steps in resource conservation includes first applying soil and water conservation measures, followed by maximizing precipitation retention, managing silt, and finally storing run-off water.

 Quick Tip

Following the correct sequence in resource conservation ensures sustainable water management and soil fertility.

30. Benefits of conservation agriculture include:

- (A). Improvement in soil structure
- (B). Increase in soil organic carbon
- (C). Need more energy
- (D). Reduce infiltration of water

Choose the correct answer from the options given below:

- (a) (A) and (B) only
- (b) (A), (B) and (C) only
- (c) (A), (B), and (D)
- (d) (A), (B), (C) and (D)

Correct Answer: (a) (A) and (B) only

Solution: Conservation agriculture leads to improved soil structure and increased organic carbon content, but it does not require more energy or reduce water infiltration.

 Quick Tip

Conservation agriculture helps improve soil health by reducing energy inputs and enhancing organic matter in the soil.

31. Which of the following statements about mango are correct?

- (A). Mankurad is a mid season popular variety of Goa.
- (B). Niranjan is an off season variety.

- (C). Chausa is a late maturing variety of South India.
(D). India ranks first in mango production.

Choose the correct answer from the options given below:

- (a) (A), (B), and (D) only.
(b) (A), (B), and (C) only.
(c) (A), (B), (C), and (D).
(d) (B), (C), and (D) only.

Correct Answer: (a) (A), (B), and (D) only.

Solution: The correct statements about mango are: - Mankurad is a popular mid-season variety of Goa. - Niranjan is an off-season variety. - India ranks first in mango production, but Chausa is not a late maturing variety of South India.

 Quick Tip

Mango varieties like Mankurad and Niranjan are important for their seasonal availability, with India being the top producer of mangoes worldwide.

32. Match List I with List II:

List I (Fruit crop)	List II (Variety)
(A) Pear	(I) Mariposa
(B) Peach	(II) Amritha
(C) Plum	(III) Laxton's Superb
(D) Pineapple	(IV) Quetta

Choose the correct answer from the options given below:

- (a) (A) - (I), (B) - (III), (C) - (II), (D) - (IV)
(b) (A) - (II), (B) - (III), (C) - (IV), (D) - (I)
(c) (A) - (III), (B) - (II), (C) - (I), (D) - (IV)
(d) (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Correct Answer: (d) (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Solution: The correct matching is: - Pear is associated with Mariposa. - Peach is associated with Laxton's Superb. - Plum is associated with Amritha. - Pineapple is associated with Quetta.

 Quick Tip

Fruit varieties are often named after their geographical origin or their specific growth characteristics, helping identify their characteristics and cultivation needs.

33. Which of the following statements about grapes are correct?

- (A). Summer pruning time in Anab-e-Shahi is April.
- (B). Winter pruning time in Thompson Seedless is October.
- (C). Summer pruning time in Bhokri is June-July.
- (D). Summer pruning time in Bangalore Blue is January to May.

Choose the correct answer from the options given below:

- (a) (A), (B), and (D) only.
- (b) (A), (B), and (C) only.
- (c) (A), (B), (C), and (D).
- (d) (B), (C), and (D) only.

Correct Answer: (c) (A), (B), (C), and (D).

Solution: The correct statements about grape pruning are: - Summer pruning in Anab-e-Shahi is done in April. - Winter pruning in Thompson Seedless is done in October. - Summer pruning time for Bangalore Blue is from January to May. Bhokri's pruning time is not correct in the statement.

 Quick Tip

Pruning schedules for grape varieties are vital to enhance fruit quality and yield while maintaining plant health.

34. Arrange fruit crops as per its importance in the Indian economy (Top to bottom):

- (A). Guava
- (B). Mango
- (C). Citrus
- (D). Banana

Choose the correct answer from the options given below:

- (a) (B), (D), (C), (A)
- (b) (D), (B), (C), (A)
- (c) (B), (D), (A), (C)
- (d) (D), (B), (A), (C)

Correct Answer: (b) (D), (B), (C), (A)

Solution: In terms of economic importance, Banana ranks first, followed by Mango, Guava, and Citrus in India.

 Quick Tip

Banana and Mango are the most economically significant fruit crops in India due to their widespread cultivation and high market demand.

35. De-navelling in banana refers to which of the following practice?

- (a). Removal of female bud
- (b). Removal of side suckers
- (c). Thinning of fruit bunch
- (d). Removal of male bud

Correct Answer: (d) Removal of male bud

Solution: De-navelling refers to the practice of removing the male bud from banana plants to improve fruit quality.

 Quick Tip

Removing the male bud in banana cultivation prevents it from interfering with fruit development and improves overall fruit quality.

36. Anacardium occidentale is native to which country?

- (a). India
- (b). South America
- (c). Philippines
- (d). Brazil

Correct Answer: (d) Brazil

Solution: Anacardium occidentale, commonly known as cashew, is native to Brazil. It was later introduced to other parts of the world, including India and the Philippines.

 Quick Tip

Brazil is the native habitat for the cashew plant, and it later spread to India and other tropical countries.

37. Which of the following statements about coconut are correct?

- (A). As an oilseed, coconut holds 15 percent share of the total oil seed value output in India.
(B). Ideal pH is 7.0 to 9.5 for good growing of coconut.
(C). Required average temperature is 27 to 32°C.
(D). Kera Sree is hybrid variety of coconut.

Choose the correct answer from the options given below:

- (a) (A), (B) and (C) only.
(b) (A), (B), and (C), (D).
(c) (A), (B), (C) and (D).
(d) (B), (C), and (D) only.

Correct Answer: (a) (A), (B), and (C) only.

Solution: The correct statements about coconut are: - Coconut holds a significant share in oilseed production. - The ideal pH for coconut growth is within 7.0 to 9.5. - The required temperature range for coconut growth is between 27°C and 32°C. Kera Sree is not specifically a hybrid variety.

💡 Quick Tip

Coconuts require specific temperature ranges and soil conditions to grow optimally, and they are essential in the global oilseed industry.

38. Match List I with List II:

List I (Important feature)	List II (Variety of Turmeric)
(A) Resistant to shoot borer	(I) Suranjana
(B) Resistant to leaf spot	(II) BSR-1
(C) High oleoresin content	(III) Prathibha
(D) Resistant to drought	(IV) Sudarshana

Choose the correct answer from the options given below:

- (a) (A) - (I), (B) - (II), (C) - (III), (D) - (IV)
(b) (A) - (I), (B) - (III), (C) - (II), (D) - (IV)
(c) (A) - (I), (B) - (II), (C) - (IV), (D) - (III)
(d) (A) - (I), (B) - (IV), (C) - (III), (D) - (II)

Correct Answer: (a) (A) - (I), (B) - (II), (C) - (III), (D) - (IV)

Solution: The correct matching of important features with turmeric varieties is: - Suranjana is resistant to shoot borer. - Prathibha is resistant to leaf spot. - BSR-1 has high oleoresin content. - Sudarshana is resistant to drought.

💡 Quick Tip

Turmeric varieties are chosen based on their resistance to pests and diseases and their high-quality oil content.

39. The correct difference between Lianas and Epiphytes is:

- (a). Lianas will grow with the support of other plants, but epiphytes will not take support of other plants.
- (b). Lianas are vascular plants rooted in the ground, but epiphytes grow on other plants.
- (c). Lianas are present in tropical rain forests, and epiphytes in dense forests of tropical climate.
- (d). Lianas do not maintain direct nutrient relation with other plants, epiphytes maintain.

Correct Answer: (b) Lianas are vascular plants rooted in the ground, but epiphytes grow on other plants.

Solution: Lianas are woody plants that grow in tropical forests and require the support of other plants for climbing. Epiphytes, on the other hand, grow on other plants but do not take nutrients from them.

💡 Quick Tip

Lianas are rooted in the ground and require support, while epiphytes are independent and grow on other plants without drawing nutrients from them.

40. In which association where one species is benefited and the other one is not affected?

- (a). Mutualism
- (b). Antibiosis
- (c). Exploitation
- (d). Commensalism

Correct Answer: (d) Commensalism

Solution: In commensalism, one species benefits while the other is neither helped nor harmed. This is different from mutualism, where both species benefit.

💡 Quick Tip

Commensalism is a type of symbiotic relationship where one species benefits, and the other remains unaffected.

41. Components from bottom to top in an ecological pyramid are:

- (a). Producers, Herbivores, Carnivores
- (b). Herbivores, Producer, Carnivores
- (c). Secondary carnivores, Herbivores, Producers
- (d). Parasites, Herbivores, Carnivores

Correct Answer: (a) Producers, Herbivores, Carnivores

Solution: In an ecological pyramid, the base comprises producers (plants), followed by herbivores (primary consumers), and then carnivores (secondary consumers).

💡 Quick Tip

Ecological pyramids typically show the flow of energy through different trophic levels, with producers at the bottom.

42. Interlocked food chains are called:

- (a). Intermixing
- (b). Interlinkage
- (c). Food web
- (d). Food matrix

Correct Answer: (c) Food web

Solution: A food web consists of interlinked food chains and shows the complex feeding relationships in an ecosystem.

💡 Quick Tip

Food webs depict how various organisms are interconnected through feeding relationships and nutrient cycling.

43. Ecological succession happening on sand is known as:

- (a). Halosere
- (b). Xerosere
- (c). Lithosere
- (d). Psammosere

Correct Answer: (d) Psammosere

Solution: Ecological succession on sand, typically beginning in barren areas, is referred to as psammosere, which is a type of primary succession.

 Quick Tip

Psammosere occurs on sandy substrates, where the first colonizing plants pave the way for more complex ecosystems.

44. Identify the correct aspects regarding multipurpose tree species:

- (A). Resistance to drought, floods etc.
- (B). Good leaf litter addition
- (C). Resistant to coppicing, pollarding, pruning
- (D). Closed crown

Choose the correct answer from the options given below:

- (a) (A), (B) and (D) only.
- (b) (A), (B) and (C) only.
- (c) (A), (C) and (D).
- (d) (B), (C) and (D) only.

Correct Answer: (b) (A), (B) and (C) only.

Solution: Multipurpose tree species must possess traits such as drought resistance, the ability to add leaf litter, and resistance to management practices like coppicing and pruning.

 Quick Tip

Multipurpose trees are valuable in both ecological and economic terms for their resilience, growth potential, and contributions to the ecosystem.

45. Basic objective of farm forestry is:

- (a). Climate protection
- (b). Community needs

- (c). Maximum profit
- (d). Wild boar control

Correct Answer: (c) Maximum profit

Solution: Farm forestry primarily aims to maximize profit while also benefiting the environment and local communities.

 Quick Tip

Farm forestry combines ecological and economic benefits by integrating trees into agricultural systems for profit, while also addressing environmental concerns.

46. Mean Annual Increment of tree growth can be computed by using the formula:

- (a). Volume/Age
- (b). $\text{Volume} \times \text{Age}$
- (c). Age/Volume
- (d). $\text{Volume} \times \text{DBH}/\text{Age}$

Correct Answer: (a) Volume/Age

Solution: The Mean Annual Increment (MAI) of tree growth is calculated as the total volume of the tree divided by its age, providing an average growth rate per year.

 Quick Tip

MAI helps in assessing the productivity and management effectiveness of forest stands over time.

47. Huber's formula is useful to measure which part of the tree?

- (a). Leaf weight
- (b). Stem volume
- (c). Root weight
- (d). Crown width

Correct Answer: (b) Stem volume

Solution: Huber's formula is commonly used to estimate the stem volume of trees, which is crucial for determining the timber volume for forestry operations.

 Quick Tip

Understanding different formulas for measuring tree parts is essential for effective forest management and resource estimation.

48. Evergreen shola forests are found in which area of India?

- (A). Nilgiris
- (B). Annamalai hills
- (C). Palni hills
- (D). Himalayas of Jammu and Kashmir

Choose the correct answer from the options given below:

- (a) (A), (B) and (D) only.
- (b) (A), (B) and (C) only.
- (c) (A), (B), (C) and (D).
- (d) (B), (C) and (D) only.

Correct Answer: (2) (A), (B) and (C) only.

Solution: Evergreen shola forests are primarily found in the Nilgiris, Annamalai hills, and Palni hills in the Western Ghats of India, not in the Himalayas.

 Quick Tip

Shola forests are characterized by their unique vegetation and biodiversity, important for ecological balance and protection.

49. IUCN stands for

- (a). International Union for Conservation of Nature
- (b). International Union for Conservation of Nature and Natural resources
- (c). Intergovernmental Union for Nature's conservation
- (d). Indian Union for Conservation of Nature

Correct Answer: (a) International Union for Conservation of Nature

Solution: IUCN is the International Union for Conservation of Nature, an organization involved in global conservation efforts and sustainable use of natural resources.

 Quick Tip

IUCN is known for its Red List of Threatened Species, which assesses the conservation status of species globally.

50. Match List I with List II:

List I (Organization/Act)	List II (Year of establishment)
(A) Bombay Natural History Society	(I) 1958
(B) Wild life Preservation Society of India	(II) 1883
(C) World Wildlife Fund	(III) 1972
(D) Wild Life Protection Act	(IV) 1969

Choose the correct answer from the options given below:

- (a) (A) - (II), (B) - (I), (C) - (IV), (D) - (III)
- (b) (A) - (I), (B) - (III), (C) - (II), (D) - (IV)
- (c) (A) - (I), (B) - (II), (C) - (IV), (D) - (III)
- (d) (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Correct Answer: (1) (A) - (II), (B) - (I), (C) - (IV), (D) - (III)

Solution: This correct matching aligns each organization and act with its establishment year, providing insight into the historical context of conservation efforts in India.

 Quick Tip

Understanding the foundation dates of conservation organizations and acts can aid in grasping the evolution of wildlife protection and environmental laws.

51. Match List I with List II:

List I (Book)	List II (Author)
(A) Forest Policy	(I) AK Patra
(B) Forest Mensuration	(II) BS Chundawat and SK Gautam
(C) Agroforestry Principles and Practice	(III) SS Negi
(D) Text book of Agroforestry	(IV) Chapman

Choose the correct answer from the options given below:

- (a) (A) - (I), (B) - (II), (C) - (III), (D) - (IV)
- (b) (A) - (I), (B) - (III), (C) - (II), (D) - (IV)
- (c) (A) - (I), (B) - (II), (C) - (IV), (D) - (III)
- (d) (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Correct Answer: (d) (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Solution: Each book is correctly matched with its author, helping to identify key resources in forestry and agroforestry literature.

 Quick Tip

Knowledge of authors and their contributions is crucial for academic and practical applications in forestry and agroforestry.

52. Who is the father of Agroforestry in India?

- (a). PKR Nair
- (b). BS Chundawat
- (c). AP Dwivedi
- (d). Mohan Kumar

Correct Answer: (a) PKR Nair

Solution: PKR Nair is widely recognized as the father of Agroforestry in India due to his significant contributions to the field.

 Quick Tip

Understanding the pioneers in Agroforestry can provide insights into the development and evolution of the field.

53. What are the important practices in canopy management of Agroforestry tree species?

- (A). Pruning
- (B). Pollarding
- (C). Coppicing
- (D). Uprooting

Choose the correct answer from the options given below:

- (a) (A), (B) and (D) only.
- (b) (A), (B) and (C) only.
- (c) (A), (B), (C) and (D).
- (d) (B), (C) and (D) only.

Correct Answer: (b) (A), (B) and (C) only.

Solution: Pruning, pollarding, and coppicing are key canopy management practices in agroforestry, enhancing tree health and productivity, while uprooting is not typically a management practice.

 Quick Tip

Effective canopy management techniques are essential for maintaining the health and productivity of agroforestry systems.

54. Which of the followings are correct regarding Riparian zones?

- (A). Strips of vegetation bordering water bodies
- (B). Width may be up to 50 m
- (C). Interface between land and river
- (D). Most nations have neglected them

Choose the correct answer from the options given below:

- (a) (A), (B) and (C) only.
- (b) (A), (B) and (D) only.
- (c) (B), (C) and (D).
- (d) (A), (C) and (D) only.

Correct Answer: (a) (A), (B) and (C) only.

Solution: Riparian zones are vegetative areas next to water bodies, acting as a buffer and interface between land and water, commonly up to 50 m in width.

 Quick Tip

Riparian zones play a crucial role in ecological health, helping to filter pollutants and provide habitat.

55. Identify the chronological order of establishment of the following programmes/organizations

- (A). Central Agroforestry Research Institute
- (B). International Council for Research in Agroforestry
- (C). All India Co-ordinated Research Project on Agroforestry
- (D). National Research Center for Agroforestry

Choose the correct answer from the options given below:

- (a) (A), (B), (C), (D).

- (b) (A), (B), (D), (C).
 (c) (B), (C), (D), (A).
 (d) (C), (B), (D), (A).

Correct Answer: (3) (B), (C), (D), (A).

Solution: The correct chronological order is: International Council for Research in Agroforestry, All India Co-ordinated Research Project on Agroforestry, National Research Center for Agroforestry, and then the Central Agroforestry Research Institute.

 Quick Tip

Awareness of the historical development of agroforestry institutions helps understand their foundational impact on current research and practices.

56. Match List I with List II:

List I (System)	List II (Components)
(A) Horti-pastoral	(I) Fodder crops+tree
(B) Silvi-olericulture	(II) Perennial hedges+crops
(C) Alley cropping	(III) Fruit tree-fodder
(D) Forage forestry	(IV) Tree+vegetables

Choose the correct answer from the options given below:

- (a) (A) - (III), (B) - (IV), (C) - (II), (D) - (I)
 (b) (A) - (I), (B) - (III), (C) - (II), (D) - (IV)
 (c) (A) - (I), (B) - (II), (C) - (IV), (D) - (III)
 (d) (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Correct Answer: (a) (A) - (III), (B) - (IV), (C) - (II), (D) - (I)

Solution: Each agroforestry system is matched with its typical components, reflecting the integration of various agricultural practices with forestry.

 Quick Tip

Understanding the components of different agroforestry systems aids in the selection of suitable methods for specific ecological and economic goals.

57. Which are the popular tree species under wood lot category?

- (A). Bamboo
 (B). Casuarina
 (C). Poplar

(D). Glyricidia

Choose the correct answer from the options given below:

- (a) (A), (B) and (D) only.
- (b) (A), (B) and (C) only.
- (c) (A), (C) and (D) only.
- (d) (B), (C) and (D) only.

Correct Answer: (b) (A), (B) and (C) only.

Solution: Bamboo, Casuarina, and Poplar are all commonly used in wood lots due to their fast growth rates and suitability for timber and pulp production.

 Quick Tip

Selecting the right species for wood lots is crucial for achieving sustainable and profitable forestry operations.

58. Match List I with List II:

List I (Agroforestry Classification)	List II (Practices)
(A) Agrisilviculture	(I) Cut and carry fodder production
(B) Silvipasture	(II) Multipurpose wood lots
(C) Agrisilvipastural	(III) Alley cropping
(D) Other systems	(IV) Home gardens

Choose the correct answer from the options given below:

- (a) (A) - (I), (B) - (II), (C) - (III), (D) - (IV)
- (b) (A) - (I), (B) - (III), (C) - (II), (D) - (IV)
- (c) (A) - (I), (B) - (II), (C) - (IV), (D) - (III)
- (d) (A) - (III), (B) - (I), (C) - (IV), (D) - (II)

Correct Answer: (d) (A) - (III), (B) - (I), (C) - (IV), (D) - (II)

Solution: This matching aligns each agroforestry classification with its corresponding practice, illustrating the diversity of approaches in agroforestry.

 Quick Tip

Agrisilviculture involves alley cropping, highlighting the integration of crop cultivation with tree farming for optimal land use.

59. What is the decreasing order of approximate area in different states in India under Taungya cultivation?

- (A). Tripura
- (B). West Bengal
- (C). Uttar Pradesh
- (D). Maharashtra

Choose the correct answer from the options given below:

- (a) (A), (B), (C), (D).
- (b) (B), (C), (A), (D).
- (c) (B), (A), (D), (C).
- (d) (C), (B), (D), (A).

Correct Answer: (b) (B), (C), (A), (D).

Solution: West Bengal, Uttar Pradesh, Tripura, and Maharashtra follow this order in terms of area under Taungya cultivation, a practice that integrates forestry and agriculture.

 Quick Tip

Understanding regional cultivation practices helps in planning and policy-making for sustainable agricultural and forestry development.

60. Arrange the correct time of seed collection in different forest tree species starting from January to December.

- (A). *Acacia catechu*
- (B). *Acrocarpus fraxinifolius*
- (C). *Ailanthus grandis*
- (D). *Casuarina equisetifolia*

Choose the correct answer from the options given below:

- (a) (A), (B), (C), (D).
- (b) (A), (C), (B), (D).
- (c) (B), (A), (D), (C).
- (d) (C), (B), (D), (A).

Correct Answer: (b) (A), (C), (B), (D).

Solution: The sequence for collecting seeds from these species through the year starts with *Acacia catechu*, followed by *Ailanthus grandis*, *Acrocarpus fraxinifolius*, and lastly *Casuarina equisetifolia*, reflecting their flowering and seed maturation periods.

 Quick Tip

Timing seed collection correctly is crucial for maximizing germination rates and ensuring healthy sapling growth.

61. Identify the tree with fleshy fruits:

- (A). Teak and walnut
- (B). Anthocephala
- (C). Oak, Almond
- (D). Gmelina and Azadirachta

Choose the correct answer from the options given below:

- (a) (A) and (B)
- (b) (A), (B) and (C)
- (c) (C) and (D)
- (d) (B) and (D)

Correct Answer: (d) (B) and (D).

Solution: Gmelina and Azadirachta are known for having fleshy fruits, while Teak, Walnut, Oak, and Almond have hard or dry fruits.

 Quick Tip

Fleshy fruits are typically found in species that have soft, edible parts surrounding the seeds.

62. Which of the following trees are not meant for pulpwood extraction?

- (A). Anthocephalus chinensis
- (B). Eucalyptus tereticornis
- (C). Populus spp.
- (D). Pithecellobium

Choose the correct answer from the options given below:

- (a) (A) and (B) only
- (b) (B) and (D)
- (c) (A) only
- (d) (D) only

Correct Answer: (d) (D) only.

Solution: Pithecellobium is not used for pulpwood extraction. Trees like Eucalyptus, Populus, and Anthocephalus are commonly used for pulpwood.

 Quick Tip

Pulpwood trees are specifically chosen for their soft wood, which is ideal for paper production.

63. Arrange the states in the decreasing order of approximate area under forests in India:

- (A). Madhya Pradesh
- (B). Maharashtra
- (C). Orissa
- (D). Arunachal Pradesh

Choose the correct answer from the options given below:

- (a) (A), (B), (C), (D).
- (b) (A), (C), (B), (D).
- (c) (B), (A), (D), (C).
- (d) (C), (B), (D), (A).

Correct Answer: (a) (A), (B), (C), (D).

Solution: The correct decreasing order of forest area in India is as follows: Madhya Pradesh, Maharashtra, Orissa, and Arunachal Pradesh.

 Quick Tip

Madhya Pradesh and Maharashtra have the largest forest areas in India, contributing significantly to the nation's biodiversity.

64. What is the size of the drawing sheet generally used in survey work?

- (a) 56 x 56 cm
- (b) 66 x 66 cm
- (c) 76 x 76 cm
- (d) 76 x 56 cm

Correct Answer: (d) 76 x 56 cm.

Solution: The standard drawing sheet size used in survey work is 76 x 56 cm, commonly used for detailed survey and mapping.

 Quick Tip

Surveying sheets are selected based on the level of detail required for mapping and documentation in field surveys.

65. Which of the following statements about survey are correct?

- (A). A leader: one who directs the work and records the measurements.
- (B). A follower: one who holds handle of the chain at rear end.
- (C). In close traverse survey a polygon is formed.
- (D). In open traverse survey a polygon is not formed.

Choose the correct answer from the options given below:

- (a) (A), (B) and (D) only.
- (b) (A), (B) and (C) only.
- (c) (A), (B), (C) and (D).
- (d) (B), (C) and (D) only.

Correct Answer: (d) (B), (C) and (D) only.

Solution: In survey work, the follower holds the rear end of the chain, and a polygon is formed in close traverse, while open traverse does not form a polygon.

 Quick Tip

Understanding the roles in survey work and the types of surveys helps in conducting accurate and efficient field measurements.

66. Which of the following statements about forest classification are correct?

- (A). Government owned forests in the state are under the control of central government.
- (B). Government owned forests in Union Territories are under the control of central government.
- (C). The head of state forests department is designated as Chief Conservator of Forests.
- (D). National forest was one component in the classification as per National Forest Policy 1952.

Choose the correct answer from the options given below:

- (a) (A), (B) and (D) only.
- (b) (A), (B) and (C) only.
- (c) (A), (B), (C) and (D).
- (d) (B), (C) and (D) only.

Correct Answer: (d) (B), (C) and (D) only.

Solution: Government-owned forests in Union Territories are under central government control, and the Chief Conservator of Forests is the head of the state's forest department. National forest was indeed one component of the classification per the National Forest Policy 1952.

 Quick Tip

Understanding forest governance and classification aids in the management and protection of national and state forests.

67. In India, how much percent of land holdings are less than two ha?

- (a) 90
- (b) 80
- (c) 70
- (d) 60

Correct Answer: (a) 90

Solution: In India, about 90

 Quick Tip

Small landholdings dominate Indian agriculture, leading to challenges in scaling farming practices for increased productivity.

68. Which of the following statements are correct?

- (A). In shifting cultivation areas, the land is plentiful and labour is scarce.
- (B). Taungya system involves intensive use of land.
- (C). In shifting cultivation areas, the land is limited and labour is plentiful.
- (D). In shifting cultivation areas, both land and labour are plentiful.

Choose the correct answer from the options given below:

- (a) (A) and (B) only.
- (b) (B) and (C) only.
- (c) (B) and (D) only.
- (d) (D) only.

Correct Answer: (a) (A) and (B) only.

Solution: Shifting cultivation generally occurs in areas where land is abundant, but labor can be scarce. The Taungya system, which integrates forestry with agriculture, involves intensive

land use.

 Quick Tip

The Taungya system is a practice that balances forestry and farming by integrating crops with the establishment of tree plantations.

69. Arrange gases in sequence (Higher to lower) as per their content in environment at or near to sea:

- (A). Nitrogen
- (B). Oxygen
- (C). CO₂
- (D). Argon

Choose the correct answer from the options given below:

- (a) (A), (B), (C), (D).
- (b) (A), (B), (D), (C).
- (c) (D), (C), (A), (B).
- (d) (C), (D), (B), (A).

Correct Answer: (b) (A), (B), (D), (C).

Solution: The most abundant gases in the atmosphere near sea level are Nitrogen, Oxygen, Argon, and then CO₂, in that order.

 Quick Tip

Nitrogen makes up about 78

70. The chief source of carbon monoxide in the environment is

- (a) Open fires
- (b) Burning coal mines
- (c) Factories
- (d) Automobiles

Correct Answer: (d) Automobiles

Solution: Automobiles, particularly those that run on gasoline or diesel, are one of the primary sources of carbon monoxide in the environment due to incomplete combustion.

 Quick Tip

Carbon monoxide is a toxic gas primarily produced by vehicles and can have serious health effects if inhaled in large quantities.

71. International Agreement on Convention on Biological Diversity was enacted in which year?

- (a) 1992
- (b) 1998
- (c) 2006
- (d) 2011

Correct Answer: (a) 1992

Solution: The Convention on Biological Diversity (CBD) was enacted in 1992 during the Earth Summit held in Rio de Janeiro, Brazil, aiming to conserve biodiversity, sustainably use its components, and ensure fair and equitable sharing of benefits.

 Quick Tip

The CBD is a landmark agreement for global conservation efforts and sustainable development goals.

72. Which of the following statements regarding pests of forest are correct?

- (A). Sap feeder insects predominantly belong to order hemiptera.
- (B). Cicadas and Psyllids are sap sucking pests.
- (C). In most cases sap feeders lead to tree death.
- (D). *Bacillus thuringiensis* is the dominant agent against defoliators.

Choose the correct answer from the options given below:

- (a) (A), (B) and (D) only.
- (b) (A), (B) and (C) only.
- (c) (A), (B), (C) and (D).
- (d) (B), (C) and (D) only.

Correct Answer: (a) (A), (B) and (D) only.

Solution: Sap feeders like Cicadas and Psyllids belong to the Hemiptera order, but they rarely lead to tree death. *Bacillus thuringiensis* is a widely used biological agent to control defoliators.

 Quick Tip

Biological agents like *Bacillus thuringiensis* provide sustainable pest control without harming the environment.

73. Which of the following statements are correct?

- (A). Hymenopteran and dipteran parasitoids are enemies for lepidopteran.
- (B). Some parasitoids directly predate their hosts.
- (C). Parasitoids lay their eggs inside their host.
- (D). Carabid beetles and spiders are predators.

Choose the correct answer from the options given below:

- (a) (A), (B) and (D) only.
- (b) (A), (B) and (C) only.
- (c) (A), (B), (C) and (D).
- (d) (B), (C) and (D) only.

Correct Answer: (c) (A), (B), (C) and (D).

Solution: All the given statements are correct, as parasitoids are known to lay their eggs inside their hosts, and Carabid beetles and spiders are well-known predators.

 Quick Tip

Parasitoids and predators play a crucial role in regulating pest populations in agro-forestry ecosystems.

74. Which of the following statements about Insect Associated Diseases are correct?

- (A). Bark beetles are known to carry fungi that impart blue stain to the sapwood of infested trees.
- (B). Bark beetles species of *Ophiostoma* and *Ceratocystis* impart substantial damage to timber products.
- (C). After the insect infestation, the sapwood typically becomes severely discolored which is called blue stain.
- (D). European spruce bark beetle *Ips typographus*, is not pathogenic and does harm the tree.

Choose the correct answer from the options given below:

- (a) (A), (B) and (D) only.
- (b) (A), (B) and (C) only.
- (c) (A), (B), (C) and (D).

(d) (B), (C) and (D) only.

Correct Answer: (b) (A), (B) and (C) only.

Solution: Bark beetles are responsible for introducing blue stain fungi like *Ophiostoma* and *Ceratocystis* into trees, causing discoloration and timber damage. *Ips typographus* is pathogenic to trees.

 Quick Tip

Understanding insect-associated diseases helps in managing pest infestations effectively to protect forest health.

75. Match List I with List II:

List I (Disease)	List II (Causal organism)
(A) Dutch elm disease	(II) <i>Ophiostoma ulmi</i>
(B) Chestnut blight	(III) <i>Cryphonectria parasitica</i>
(C) White pine blister	(IV) <i>Cronartium ribicola</i>
(D) Oak wilt	(I) <i>Ceratocystis fagacearum</i>

Choose the correct answer from the options given below:

- (a) (A) - (I), (B) - (II), (C) - (III), (D) - (IV)
- (b) (A) - (II), (B) - (III), (C) - (IV), (D) - (I)
- (c) (A) - (II), (B) - (I), (C) - (IV), (D) - (III)
- (d) (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Correct Answer: (b) (A) - (II), (B) - (III), (C) - (IV), (D) - (I).

Solution: Each disease is correctly matched with its causal organism, providing an understanding of the biological causes behind major tree diseases.

 Quick Tip

Effective management of forest diseases requires identifying their causal organisms and understanding their life cycles.