



General Instructions

- (i) The examination will be conducted in Computer-Based Test (CBT) mode.
- (ii) Each question carries +5 marks for correct answer and -1 mark for wrong answer.
- (iii) The total number of questions are 50.
- (iv) Duration of the exam is 1 hour (60 minutes).

1. Arrange the following gases in descending order in terms of percentage in dry air of the lower atmosphere:

- (A) Carbon dioxide
- (B) Argon
- (C) Nitrogen
- (D) Oxygen

Choose the correct answer from the options given below:

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

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

Solution:

Step 1: Recall the composition of dry air.

Major gases present in dry air are:

Nitrogen $\approx 78\%$

Oxygen $\approx 21\%$

Argon $\approx 0.93\%$

Carbon Dioxide $\approx 0.04\%$

Step 2: Arrange in descending order.

Descending order means:

Highest $\rightarrow$ Lowest

Thus:

Nitrogen $>$ Oxygen $>$ Argon $>$ Carbon Dioxide

Using symbols:

$C > D > B > A$

Step 3: Identify the correct option.

Therefore:

C, D, B, A

Hence, the correct answer is:

(D)

Quick Tip: Composition of dry air:

Nitrogen $\approx 78\%$

Oxygen $\approx 21\%$

Argon $\approx 0.93\%$

CO₂ $\approx 0.04\%$

2. Match List-I with List-II:

List-I		List-II	
(A)	Humidity	(I)	Anemometer
(B)	Wind	(II)	Lysimeter
(C)	Light Intensity	(III)	Hygrometer
(D)	Evapotranspiration	(IV)	Luxmeter

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

Solution:

Step 1: Match Humidity.

Humidity is measured using:

Hygrometer

Thus:

(A) $\rightarrow$ (III)

Step 2: Match Wind.

Wind speed is measured using:

Anemometer

Thus:

$(B) \rightarrow (I)$

Step 3: Match Light Intensity.

Light intensity is measured using:

Luxmeter

Thus:

$(C) \rightarrow (IV)$

Step 4: Match Evapotranspiration.

Evapotranspiration is measured using:

Lysimeter

Thus:

$(D) \rightarrow (II)$

Step 5: Identify the correct option.

Correct matching is:

$A - (III), B - (I), C - (IV), D - (II)$

Hence, the correct answer is:

(A)

Quick Tip:

Hygrometer → Humidity

Anemometer → Wind Speed

Luxmeter → Light Intensity

Lysimeter → Evapotranspiration

3. The colostrum should be fed at the rate of:

- (A) 25% of calf's body weight
- (B) 30% of calf's body weight
- (C) 10% of calf's body weight
- (D) 40% of calf's body weight

Correct Answer: (C) 10% of calf's body weight

Solution:

Step 1: Understand colostrum feeding.

Colostrum is the first milk produced after birth.

It is rich in:

- Antibodies
- Proteins
- Vitamins
- Minerals

It helps in developing immunity in newborn calves.

Step 2: Recommended feeding rate.

A calf should receive colostrum at approximately:

10%

of its body weight within the first few hours after birth.

Step 3: Analyze the remaining options.

Option (A)

25%

is much higher than recommended level.

⇒ Incorrect

Option (B)

30%

is also excessive.

⇒ Incorrect

Option (D)

40%

is far beyond the recommended quantity.

⇒ Incorrect

Step 4: Identify the correct option.

Therefore:

10% of calf's body weight

Hence, the correct answer is:

(C)

Quick Tip: Colostrum feeding:

10% of calf's body weight

should be given soon after birth for immunity development.

4. Which of the following are Cyanobacteria?

- (A) Nucleopolyhedrovirus
- (B) Anabaena
- (C) Nostoc
- (D) Oscillatoria

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:

Step 1: Understand Cyanobacteria.

Cyanobacteria are:

Photosynthetic Prokaryotes

commonly called:

Blue-Green Algae

Step 2: Analyze each organism.

Nucleopolyhedrovirus

It is a virus and not a cyanobacterium.

⇒ Incorrect

Anabaena

A nitrogen-fixing cyanobacterium.

⇒ Correct

Nostoc

A filamentous cyanobacterium.

⇒ Correct

Oscillatoria

A common cyanobacterium found in aquatic habitats.

⇒ Correct

Step 3: Identify the correct combination.

Correct organisms are:

B, *C*, and *D*

Hence, the correct answer is:

(D)

Quick Tip: Examples of cyanobacteria:

Anabaena

Nostoc

Oscillatoria

5. Starch is an example of

- (A) Monosaccharides
- (B) Oligosaccharides
- (C) Disaccharides

(D) Polysaccharides

Correct Answer: (D) Polysaccharides

Solution:

Step 1: Understand starch.

Starch is a complex carbohydrate made up of many glucose units joined together.

Thus it is:

Polymer of Glucose

Step 2: Classify carbohydrates.

Monosaccharides

Contain single sugar unit.

Example:

Glucose

⇒ Incorrect

Oligosaccharides

Contain few monosaccharide units.

⇒ Incorrect

Disaccharides

Contain two monosaccharide units.

Example:

Sucrose

⇒ Incorrect

Polysaccharides

Contain large number of monosaccharide units.

Examples:

Starch, Cellulose, Glycogen

⇒ Correct

Step 3: Identify the correct option.

Therefore:

Polysaccharides

Hence, the correct answer is:

(D)

Quick Tip: Starch:

Polysaccharide

made up of:

Many Glucose Units

6. Egg of poultry contains almost all the Vitamins with the exception of Vitamin

- (A) Vitamin B
- (B) Vitamin C
- (C) Vitamin A
- (D) Vitamin D

Correct Answer: (B) Vitamin C

Solution:

Step 1: Understand nutrient composition of egg.

Eggs are highly nutritious and contain:

- Proteins
- Fats
- Minerals
- Most vitamins

Step 2: Identify the missing vitamin.

Eggs contain:

Vitamin A, B, D, E, K

but they lack:

Vitamin C

Step 3: Analyze the options.

Vitamin B

Present in eggs.

⇒ Incorrect

Vitamin C

Absent in eggs.

⇒ Correct

Vitamin A

Present in egg yolk.

⇒ Incorrect

Vitamin D

Also present in eggs.

⇒ Incorrect

Step 4: Identify the correct option.

Therefore:

Vitamin C

Hence, the correct answer is:

(B)

Quick Tip: Egg contains almost all vitamins except:

Vitamin C

7. Who is the father of tissue culture?

- (A) Jethro Tull
- (B) Folke Karl Skoog
- (C) Toshio Murashige
- (D) Haberlandt

Correct Answer: (D) Haberlandt

Solution:

Step 1: Understand tissue culture.

Tissue culture is the technique of growing plant cells, tissues or organs under sterile laboratory conditions on nutrient media.

Step 2: Identify the scientist associated with tissue culture.

Gottlieb Haberlandt

is known as:

Father of Plant Tissue Culture

because he first proposed the concept of culturing isolated plant cells.

Step 3: Analyze the remaining options.

Jethro Tull

Known for contributions to agricultural machinery.

⇒ Incorrect

Folke Karl Skoog

Known for plant hormones and tissue culture media studies.

⇒ Incorrect

Toshio Murashige

Co-developed Murashige and Skoog medium.

⇒ Incorrect

Step 4: Identify the correct option.

Therefore:

Haberlandt

Hence, the correct answer is:

(D)

Quick Tip: Father of Plant Tissue Culture:

Gottlieb Haberlandt

MS medium was developed by:

Murashige and Skoog

8. The term heterosis is coined by

- (A) Hull, 1945
- (B) Bruce, 1910
- (C) East, 1908
- (D) Shull, 1914

Correct Answer: (D) Shull, 1914

Solution:

Step 1: Understand heterosis.

Heterosis refers to:

Hybrid Vigour

where hybrid offspring show superior qualities compared to parents.

Step 2: Identify the scientist associated with the term.

The term:

Heterosis

was coined by:

G. H. Shull

in:

1914

Step 3: Analyze the remaining options.

Hull, 1945

Associated with quantitative genetics, not coining heterosis.

⇒ Incorrect

Bruce, 1910

Worked on hybrid vigour concepts.

⇒ Incorrect

East, 1908

Contributed to genetics studies.

⇒ Incorrect

Step 4: Identify the correct option.

Therefore:

Shull, 1914

Hence, the correct answer is:

(D)

Quick Tip: Heterosis means:

Hybrid Vigour

Term coined by:

G. H. Shull (1914)

9. Forage crops include

- (A) Berseem
- (B) Safflower
- (C) Lucerne
- (D) Sunflower

Choose the correct answer from the options given below:

- (A) A, B and D only
- (B) A and C only
- (C) A, B, C and D only
- (D) B, C and D only

Correct Answer: (B) A and C only

Solution:

Step 1: Understand forage crops.

Forage crops are crops cultivated mainly for:

Animal Feed and Fodder

Step 2: Analyze each crop.

Berseem

A common fodder crop used for livestock feed.

⇒ Forage Crop

Safflower

Mainly cultivated as an oilseed crop.

⇒ Not a Forage Crop

Lucerne

Also known as alfalfa, widely used as fodder.

⇒ Forage Crop

Sunflower

Primarily an oilseed crop.

⇒ Not a Forage Crop

Step 3: Identify the correct combination.

Correct forage crops are:

A and C

Hence, the correct answer is:

(B)

Quick Tip: Examples of forage crops:

Berseem

Lucerne

used as nutritious fodder for livestock.

10. Arrange the following soil particles in descending order of their diameter:

- (A) Clay
- (B) Silt
- (C) Fine sand
- (D) Coarse sand

Choose the correct answer from the options given below:

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

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

Solution:

Step 1: Understand soil particle sizes.

Soil particles are classified according to their diameter.

General order from largest to smallest:

Coarse Sand > Fine Sand > Silt > Clay

Step 2: Arrange the given particles.

Coarse Sand

has the largest diameter.

Fine Sand

is smaller than coarse sand.

Silt

is finer than sand.

Clay

has the smallest particle size.

Thus:

$$D > C > B > A$$

Step 3: Identify the correct option.

Therefore:

D, C, B, A

Hence, the correct answer is:

(C)

Quick Tip: Descending order of soil particle diameter:

Coarse Sand > Fine Sand > Silt > Clay