

• Question No. 1

In C4 plants, Calvin cycle works at

Options :

1. Stroma of bundle sheath chloroplasts
2. Grana of bundle sheath chloroplasts
3. Grana of mesophyll chloroplasts
4. Stroma of mesophyll chloroplasts
- 5.

Answer : Stroma of bundle sheath chloroplasts

• Question No. 2

The most widely accepted theory for ascent of sap in trees is

Options :

1. Capillarity
2. Role of atmospheric pressure
3. Pulsating action of living cell
4. Transpiration pull and cohesion theory of Dixon and Jolly
- 5.

Answer : Transpiration pull and cohesion theory of Dixon and Jolly

• Question No. 3

Maximum solar energy is trapped by

Options :

1. Planting trees
2. Cultivating crops

3. Growing algae in tanks
4. Growing grasses
- 5.

Answer : Growing algae in tanks

• Question No. 4

Magnesium is a component of

Options :

1. Chlorophyll
2. Cytochrome
3. Haemoglobin
4. Haemocyanin
- 5.

Answer : Chlorophyll

• Question No. 5

Enzyme used by the biscuit manufacturers to lower the protein level of flour is

Options :

1. Amylase
2. Protease
3. Cellulase
4. Xylanase
- 5.

Answer : Protease

• Question No. 6

Klinostat is employed in the study of

Options :

1. Osmosis
2. Growth movements
3. Photosynthesis
4. Respiration
- 5.

Answer : Growth movements

• Question No. 7

An example of the simplest carbohydrate

Options :

1. Glucose
2. Sucrose
3. Dihydroxyacetone
4. Glyceraldehyde
- 5.

Answer : Glyceraldehyde

• Question No. 8

If the water potential of pure water is equal to zero, what does it mean?

- A. Water with solutes
- B. Water contains solutes and gases
- C. Water without solutes
- D. Water with organic sugars
- E. Water with inorganic sugars

Choose the correct answer from the options given below:

Options :

1. A only
2. C only
3. B and D only
4. E only
- 5.

Answer : C only

• Question No. 9

Match List I with List II

List I	List II
Equipment	Parameter
A. IRGA	I. Transpiration rate
B. Porometer	II. Water potential
C. Osmometer	III. Photosynthetic rate
D. Pressure bomb system	IV. Osmotic potential

Choose the correct answer from the options given below:

Options :

1. A-III, B-II, C-IV, D-I
2. A-III, B-I, C-IV, D-II
3. A-II, B-I, C-III, D-IV
4. A-I, B-II, C-IV, D-III
- 5.

Answer : A-III, B-I, C-IV, D-II

- Question No. 10

Which of the following is not the classified form of conjugated proteins?

Options :

1. Lipoproteins
2. Glycoproteins
3. Metalloproteins
4. Complete proteins
- 5.

Answer : Complete proteins

- Question No. 11

Given below are two statements

Statement I: During transpiration process most of the water loss occurs through stomata.

Statement II: Respiration required CO₂ to provide energy during growth and development.

In light of the above statements, choose the most appropriate answer from the options given below.

Options :

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct
- 5.

Answer : Statement I is correct but Statement II is incorrect

- Question No. 12

Unfolding of a protein can be termed as

Options :

1. Renaturation
2. Denaturation
3. Oxidation
4. Reduction
- 5.

Answer : Denaturation

• Question No. 13

The degree of unsaturation of lipids can be measured as

Options :

1. Iodine number
2. Saponification number
3. Reichert Meissel number
4. Polenske number
- 5.

Answer : Iodine number

• Question No. 14

Which of the following is the correct nucleotide pair in RNA

Options :

1. Adenine-Guanine
2. Adenine-Thiamine
3. Adenine-Uracil
4. Adenine-Cytosine
- 5.

Answer : Adenine-Uracil

• Question No. 15

Given below are two statements, one is labelled as Assertion A and the other is labelled as Reason R

Assertion A: Median is the selection of central value, located in the middle of the series when all observations are arranged in ascending or descending order of magnitude but the use of median is not so popular.

Reason R: Median does not possess any mathematical properties.

In light of the above statements, choose the correct answer from the options given below

Options :

1. Both A and R are true and R is the correct explanation of A
2. Both A and R are true but R is NOT the correct explanation of A
3. A is true but R is false
4. A is false but R is true
- 5.

Answer : Both A and R are true and R is the correct explanation of A

• Question No. 16

Following are the statements pertaining to as a strip-plot-design

- A. Vertical strip-plot and horizontal strip-plot are never perpendicular to each other.
- B. Precision associated with vertical factor is sacrificed to improve the precision of horizontal factor.
- C. The intersection plot is smallest in size.
- D. There is no relationship between vertical plot and horizontal plot with respect to their sizes.
- E. Precision of intersection effect is lower than main effects of vertical and horizontal factors.

Choose the correct answer from the options given below:

Options :

1. A and C only
2. B and D only
3. A, B and C only
4. C and D only
- 5.

Answer : C and D only

• Question No. 17

The millenium ecosystem assessment (MEA) was launched in the year

- A. 2001 with support from United Nations
- B. 2001 with support from Australia
- C. 2001 with support from Nepal
- D. 2001 with support from Japan
- E. 2001 with support from Japan and India

Choose the correct answer from the options given below:

Options :

1. A only
2. B and A only
3. A, B and D only
4. C and E only
- 5.

Answer : A only

• Question No. 18

Dominant clay mineral present in red soil is

Options :

1. Montmorillonite
2. Kaolinite
3. Illite
4. Chlorite
- 5.

Answer : Kaolinite

• Question No. 19

- A. Clay content of black soils ranges from 30-80%.
- B. Black soils are developed on basalt or alluvium derived basaltic rock.
- C. Black soils exhibit eluviation and/or illuviation process.
- D. Black soils have high bulk density.

Choose the correct answer from the options given below:

Options :

1. A, B and C only
2. A, B and D only
3. A, C and D only
4. B, C and D only
- 5.

Answer : A, B and D only

• Question No. 20

Recently developed mineral soils with no diagnostic horizon, low degree of soil development due to less time, occurs in all states of India is called

Options :

1. Inceptisols
2. Alfisols
3. Entisols
4. Histosols
- 5.

Answer : Entisols

• Question No. 21

Match List I with List II

List I	List II
Parameters	Unit
A. Relative humidity	I. Degree centigrade
B. Temperature	II. Km per hour
C. Wind speed	III. Octa
D. Cloud cover	IV. Percentage

Choose the correct answer from the options given below:

Options :

1. A-III. B-II. C- IV. D-I
2. A-I. B-IV. C-III. D-II
3. A-IV. B-I. C-II, D-III
4. A-II. B-III. C-I, D-IV
- 5.

Answer : A-IV. B-I. C-II, D-III

• Question No. 22

Given below are two statements, one is labelled as Assertion A and the other is labelled as Reason R

Assertion A: The geostationary satellite appears stationary to earth and can view the same area on the earth continuously.

Reason R: The geostationary satellite is orbiting in the polar plane of earth at 36000 km above the earth.

In light of the above statements, choose the most appropriate answer from the options given below

Options :

1. Both A and R are correct and R is the correct explanation of A
2. Both A and R are correct but R is NOT the correct explanation of A
3. A is correct but R is not correct
4. A is not correct but R is correct
- 5.

Answer : A is correct but R is not correct

• Question No. 23

Given below are two statements

Statement I: Minimum, optimum and maximum temperature for germination of rice crop are 10-12°C, 30-32°C and 36-38°C, respectively.

Statement II: Minimum, optimum and maximum temperature for germination of wheat crop are 3.0-4.5°C, 20-25°C and 30-40°C, respectively.

In light of the above statements, choose the correct answer from the options given below

Options :

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true
- 5.

Answer : Statement I is true but Statement II is false

- Question No. 24

How much photoperiod (hours) is required by long day plants?

Options :

1. <10 hours
2. >14 hours
3. >18 hours
4. >20 hours
- 5.

Answer : >14 hours

- Question No. 25

How many Agro-ecological regions are there in India according to ICAR?

Options :

1. 8
2. 15
3. 20
4. 36
- 5.

Answer : 8

- Question No. 26

Given below are two statements

Statement I: The sun behaves as a black body.

Statement II: Sun absorbs both all energy received and in turn radiates energy at the maximum rate possible for a given temperature.

In light of the above statements, choose the correct answer from the options given below

Options :

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true
- 5.

Answer : Both Statement I and Statement II are true

• Question No. 27

Given below are two statements

Statement I: The greenhouse effect is the retention of heat in the lower atmosphere due to absorption and re-radiation by clouds and certain gases.

Statement II: The anthropogenic greenhouse gases effect is the result of the accumulation of trace gases in the air from human activities.

In light of the above statements, choose the correct answer from the options given below

Options :

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true
- 5.

Answer : Both Statement I and Statement II are true

- Question No. 28

Given below are two statements

Statement I: Synoptic weather forecasts are popular all over the World, because complex atmospheric equations can be understood through numerical charts.

Statement II: In statistical weather forecast approach, a forecast tries to correlate one weather element with another.

In light of the above statements, choose the correct answer from the options given below

Options :

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true
- 5.

Answer : Statement I is false but Statement II is true

- Question No. 29

Where is the coldest region of the atmosphere?

Options :

1. Tropopause
2. Stratopause
3. Mesopause
4. Troposphere
- 5.

Answer : Mesopause

- Question No. 30

Nitrogen concentration in the atmosphere

Options :

1. 78%
2. 50%
3. 20%
4. 55%
- 5.

Answer : 78%

• Question No. 31

By which process relative humidity of a parcel of air can be increased?

- A. Adding dry air from outside
- B. Adding moisture from outside
- C. Decreasing its radiation
- D. Increasing wind speed
- E. Increasing temperature

Choose the correct answer from the options given below:

Options :

1. C only
2. A only
3. B only
4. D and E only
- 5.

Answer : B only

- Question No. 32

RGR is equal to

Options :

1. NAR/LAR
2. $NAR+LAR$
3. $(NAR+LAR) NAR$
4. $NAR \times LAR$
- 5.

Answer : $NAR \times LAR$

- Question No. 33

A field experiment set up in RBD has 9 treatments and 3 replication, what will be the DF for the error term

Options :

1. 26
2. 16
3. 8
4. 27
- 5.

Answer : 16

- Question No. 34

Optical sensor used for real-time precision of Nitrogen management in agricultural crops is

Options :

1. Leaf colour chart
2. Green Seeker
3. Ceptometer

4. Infrared Gas Analyser

5.

Answer : Green Seeker

• Question No. 35

Given below are two statements

Statement I: India is a country that extends from South to North for about 3000 km between the longitude of 8°4' N and 37°6' N.

Statement II: India extends from East to West for about 3200 km between the longitude 68° 9' E and 92°25' E.

In light of the above statements, choose the most appropriate answer from the options given below

Options :

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

5.

Answer : Both Statement I and Statement II are incorrect

• Question No. 36

Sowing depths for maize and semi dwarf wheat seeds are

Options :

1. 3-5 cm and 5-6 cm
2. 2-3 cm and 4-5 cm
3. 9-10 cm and 7-9 cm
4. 2-4 cm and 4-8 cm
- 5.

Answer : 3-5 cm and 5-6 cm

- Question No. 37

Domestication of sheep started during

Options :

1. 8700 BC
2. 7700 BC
3. 4400 BC
4. 2900 BC
- 5.

Answer : 8700 BC

- Question No. 38

Which one of the following pairs is not the basic race of sorghum?

Options :

1. Bicolor and Kafir
2. Durra and Bicolor
3. Guinea and Durra
4. Gymnotheria and Heterostachy
- 5.

Answer : Gymnotheria and Heterostachy

- Question No. 39

Harvesting time of Boro and Aus rice is carried out during

Options :

1. Rabi and kharif

2. Kharif and kharif
3. Summer and rabi
4. Summer and kharif
- 5.

Answer : Summer and rabi

- Question No. 40

Match List I with List II

List I	List II
Crops	Varieties
A. Chickpea	I. PU-31
B. Lentil	II. L-4147
C. Urd bean	III. GNG-469
D. Moong bean	IV. IPM 02-3

Choose the correct answer from the options given below:

Options :

1. A-III, B-II, C- I, D-IV
2. A-II, B- I, C-IV, D-III
3. A-IV, B-I, C-II, D-III
4. A-II, B-III, C-I, D-IV
- 5.

Answer : A-III, B-II, C- I, D-IV

- Question No. 41

The edible oil with its quick drying property is used for preparation of paints, furnishes and printing ink of which of the following crops.

Options :

1. Linseed
2. Chickpea
3. Mustard
4. Safflower
- 5.

Answer : Linseed

- Question No. 42

Scientific name of green gram is:

Options :

1. Vigna radiata
2. Vigna mungo
3. Vigna sinensis
4. Glycine max
- 5.

Answer : Vigna radiata

- Question No. 43

Macrosperma and microsperma are the major groups of following crops

Options :

1. Lentil
2. Wheat
3. Chickpea
4. Fieldpea

5.

Answer : Lentil

• Question No. 44

Drug used for the cure of constipation and dysentery is originated from which of the following crops?

Options :

1. Mentha arvensis
2. Cymbopogon martini
3. Plantago ovata
4. Cymbopogon flexuosus
- 5.

Answer : Plantago ovata

• Question No. 45

Given below are two statements, one is labelled as Assertion A and the other is labelled as **Reason R**

Assertion A: The main aim of topping and desuckering operations is to divert the energy and nutrients of the plants from flower head to leaves.

Reason R: These activities are done to influence the yield and quality of tobacco.

In light of the above statements, choose the most appropriate answer from the options given below

Options :

1. Both A and R are correct and R is the correct explanation of A
2. Both A and R are correct but R is NOT the correct explanation of A
3. A is correct but R is not correct
4. A is not correct but R is correct
- 5.

Answer : Both A and R are correct and R is the correct explanation of A

- Question No. 46

Match List I with List II

List I	List II
Crops	Scientific names
A. Oats	I. Trifolium alexandrinun
B. Barseem	II. Cyamopsis tetragonoloba
C. Lucern	III. Medicavo sativa
D. Guar	IV. Avena sativa

Choose the correct answer from the options given below:

Options :

1. A-IV. B-I. C-III. D-II
2. A-II. B- I. C-IV, D-III
3. A-III. B-II. C- I. D-IV
4. A-II. B-III. C-I. D-IV
- 5.

Answer : A-IV. B-I. C-III. D-II

- Question No. 47

Earthing-up is needed in sugarcane under which of the following planting systems.

Options :

1. Furrow planting
2. Trench planting
3. Flat bed planting
4. Raised bed planting

5.

Answer : Flat bed planting

• Question No. 48

Husk as drug is the economic part of which of the following plants

Options :

1. Mint
2. Citronella
3. Isabgol
4. Palmarosa
- 5.

Answer : Isabgol

• Question No. 49

Quantity of seed required for sowing direct-seeded rice in a 10,000 square metre area at a spacing of 20 cm × 5 cm. if 1000 grain weight is 20 g and germination and purity is 90% each.

Options :

1. 20.0 kg
2. 24.7 kg
3. 22.2 kg
4. 50.0 kg
- 5.

Answer : 24.7 kg

• Question No. 50

Calculate the amount of urea for 4000 m² area if nitrogen application rate is 120 kg/ha

Options :

1. 10.43 kg
2. 101.43 kg
3. 104.34 kg
4. 114.34 kg
- 5.

Answer : 104.34 kg

• Question No. 51

A formulation of a herbicide generally not diluted and supplied ready to use is called

Options :

1. WP
2. ULV
3. WDG
4. DF
- 5.

Answer : ULV

• Question No. 52

Inter-culture with bullocks or tractor is mostly performed in widely row sown crops. A solid (broadcast) crop where it is usually performed is

Options :

1. Direct seeded rice
2. Ragi
3. Sorghum
4. Wheat
- 5.

Answer : Direct seeded rice

• Question No. 53

A commercial bio-herbicide for the control of Sorghum halepense

Options :

1. Devine
2. Bipolaris
3. Biolo-phos
4. Lubao
- 5.

Answer : Bipolaris

• Question No. 54

A Xerophytic weed

Options :

1. Pluchea lanceolata
2. Phalaris minor
3. Typha dephantine
4. Cyperus iria
- 5.

Answer : Pluchea lanceolata

• Question No. 55

Match List I with List II

Match the weed species with their seed production potential

List I	List II
--------	---------

Weed species	Seeds/plant
A. Orobanche	I. 500
B. Avena ludoviciana	II. 50
C. Striga	III. 5.00.000
D. Veronica hederifolia	IV. 50.000

Choose the correct answer from the options given below:

Options :

1. A-IV, B - I, C- II, D-III
2. A I, B III, C- IV, D-II
3. A-III, B- I, C-IV, D-II
4. A-II, B IV, C- III, D-I
- 5.

Answer : A-III, B- I, C-IV, D-II

- Question No. 56

The followings are the practices in stale seed bed

- A. Irrigation of the seed bed
- B. Cultivation, leveling and seed bed preparation
- C. Sowing of crop seed
- D. Ploughing
- E. Spray of glyphosate or paraquat

Choose the correct answer from the options given below

Options :

1. E-D-A-B-C
2. A-D-B-C-E
3. D-B-A-E-C
4. B-A-D-C-E
- 5.

Answer : D-B-A-E-C

- Question No. 57

Weeds use to cure jaundice

Options :

1. Cyprus rotundus
2. Cyanodon dactylon
3. Ageratum
4. Phyllanthus niruri
- 5.

Answer : Phyllanthus niruri

- Question No. 58

The main objective of integrated weed management is

Options :

1. Near complete elimination of weeds with high crop yield
2. Eradicate especially perennial weeds from crops
3. Maintain weeds below the threshold level
4. To achieve high yield and profits
- 5.

Answer : Maintain weeds below the threshold level

- Question No. 59

Tembotrione has been registered in India for its use in

Options :

1. Sorghum
2. Maize
3. Pearlmillet
4. Soybean
- 5.

Answer : Maize

- Question No. 60

Match List I with List II

Match the mode of action in List I with the herbicides in List II

List I	List II
Mode of action	Herbicide
A. Cell division disruption	I. Fluazifop-p-butyl
B. ALS inhibition	II. Glyphosate
C. ACCase inhibition	III. Dinitroaniline
D. EPSP synthase	IV. Sulfonyl ureas

Choose the correct answer from the options given below:

Options :

1. A-II, B IV, C-III, D-I
2. A-II, B IV, C- I, D-III
3. A-III, B I, C-IV, D-II

4. A-III, B IV, C- I, D-II

5.

Answer : A-III, B IV, C- I, D-II

• Question No. 61

What will be the weed control efficiency (%). if the number of weeds in clodinafop treated plot is 190/ m² and that in a control plot is 361/m²?

Options :

1. 33.4

2. 43.4

3. 47.3

4. 57.3

5.

Answer : 47.3

• Question No. 62

Match List I with List II

Match the weed in List I with their bio-control agent in List II

List I	List II
Weed	Bio-control agent
A. Orobanche	I. Cassia tora
B. Parthenium	II. Teleonemia scrupulosa
C. Lantana camara	III. Colletotrichum gloeosporides
D. Cuscuta	IV. Phytomyza

Choose the correct answer from the options given below:

Options :

1. A-IV, B- I, C- II, D - III
2. A-II, B- IV, C- I, D - III
3. A-III, B-I, C-IV, D - II
4. A-II, B- I, C- IV, D- III
- 5.

Answer : A-IV, B- I, C- II, D - III

• Question No. 63

Given below are two statements

Statement I: In case of pre-emergence herbicides less droplet size is effective and for post emergence herbicides bigger droplet size is desirable.

Statement II: More the size of droplet, less the chance of herbicide drift and less herbicide activity.

In light of the above statements, choose the correct answer from the options given below

Options :

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true
- 5.

Answer : Statement I is false but Statement II is true

• Question No. 64

A phenomenon in degradation process wherein an intermediate product of herbicides proves more phytotoxic than the parent compound

Options :

1. Reverse metabolism
2. Conjugation
3. Metabolism
4. Coupling
- 5.

Answer : Reverse metabolism

• Question No. 65

Match List I with List II

Match the herbicides in List I with their rate of application in List II

List I	List II
Herbicide	Rate of application
A. Metolachlor	I. 150-200 g/ha
B. Tembotrione	II. 20 g/ha
C. Pyrazosulfuron-ethyl	III. 1500 g/ha
D. Oxyfluorfen	IV. 120 g/ha

Choose the correct answer from the options given below:

Options :

1. A-IV, B-I, C-II, D-III
2. A-III, B - IV, C-II, D-I
3. A-II, B III, C- IV, D-I
4. A-III, B-II, C-IV, D-I
- 5.

Answer : A-III, B - IV, C-II, D-I

- Question No. 66

An 80 gm NaOH is dissolved in 500 ml of water. What is molarity of the solution

Options :

1. 0.4 M
2. 4N
3. 4M
4. .004M
- 5.

Answer : 4M

- Question No. 67

Given below are two statements

Statement I: C3 weeds such as Avena fatua, Phalaris minor and Chenopodium album are generally more competitive than C4 weeds especially at higher temperature conditions.

Statement II: In C4 weeds photosynthesis occurs via the Calvin - Benson Cycle and the first stable product is phosphoglyceric acid.

In light of the above statements, choose the correct answer from the options given below

Options :

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true
- 5.

Answer : Both Statement I and Statement II are false

- Question No. 68

The amount of basalin 45 EC for a plot of 50 m x 40 m at recommended rate of fluchloralin at 0.75 kg/ha is

Options :

1. 0.111 kg
2. 0.222 kg
3. 0.333 kg
4. 0.444 kg
- 5.

Answer : 0.333 kg

- Question No. 69

Calculate the concentration of a solution if 200 gm herbicide mixture is mixed in 400 litre of water.

Options :

1. 0.5
2. 5
3. 0.05
4. 0.005
- 5.

Answer : 0.05

- Question No. 70

Match List I with List II

Match the crop in List I with the registered herbicide in List II

List I	List II
Crop	Herbicide
A. Soybean	I. Anilophos

B. Maize	II. Glyphosate
C. Rice	III. Tembotrione
D. Tea	IV. Quazalofop-ethyl

Choose the correct answer from the options given below:

Options :

1. A-IV, B-III, C- I, D - II
2. A-I, B - II, C- IV, D-III
3. A-II, B I, C-IV, D - III
4. A-I, B III, C- IV, D-II
- 5.

Answer : A-IV, B-III, C- I, D - II

- Question No. 71

Statement I: Saline soils are called White alkali soils

Statement II: Saline soils contains salts capable of undergoing alkaline hydrolysis

Options :

1. Statement I and II are correct
2. Statement I is correct and statement II is incorrect
3. Statement I is incorrect and Statement II is correct
4. Statement I and II are incorrect
- 5.

Answer : Statement I is correct and statement II is incorrect

- Question No. 72

Given below are two statements, one is labelled as Assertion A and the other is labelled as **Reason R**

Assertion A : Temperature above 25°C reduces the test-weight of wheat grain.

Reason R : Reduction in test-weight of wheat grain is due to hastening in maturity.

In light of the above statements, choose the correct answer from the options given below

Options :

1. Both A and R are true and R is the correct explanation of A
2. Both A and R are true but R is NOT the correct explanation of A
3. A is true but R is false
4. A is false but R is true
- 5.

Answer : Both A and R are true and R is the correct explanation of A

• Question No. 73

Match List I with List II

List I	List II
Irrigation project	State
A. Koyna	I. Himachal Pradesh
B. Idukki	II. Maharashtra
C. Govind Sagar	III. Kerala
D. Hirakud	IV. Odisha

Choose the correct answer from the options given below:

Options :

1. A-II, B-III, C-I, D-IV
2. A-III, B-II, C-IV, D-I
3. A-IV, B-I, C-II, D-III

4. A-IV, B-III, C-I, D-II

5.

Answer : A-II, B-III, C-I, D-IV

• Question No. 74

The maximum permissible slope per cent for furrow irrigation (short, near horizontal furrows) is

Options :

1. 0.1 Per cent

2. 0.5 Per cent

3. 1.0 Per cent

4. 1.5 Per cent

5.

Answer : 0.5 Per cent

• Question No. 75

Given below are two statements

Statement I: A surface irrigation event is composed of four phases namely, advance phase, storage phase, depletion phase and recession phase.

Statement II: In recession phase of surface irrigation, the depth of water applied to any point in the field is a function of opportunity time, length of time for which water is present on soil surface.

In light of the above statements, choose the correct answer from the options given below

Options :

1. Both Statement I and Statement II are true

2. Both Statement I and Statement II are false

3. Statement I is true but Statement II is false

4. Statement I is false but Statement II is true

5.

Answer : Both Statement I and Statement II are true

• Question No. 76

What is the efficiency (%) of sprinkler irrigation?

Options :

1. 60-65

2. 65-70

3. 70-85

4. 85-95

5.

Answer : 70-85

• Question No. 77

How much area can be irrigated with a flow rate of 30 liters per second for 10 hours a day when irrigation requirement of the 100 days duration crop is 50 cm?

Options :

1. 60.0 ha

2. 30.0 ha

3. 21.6 ha

4. 16.6 ha

5.

Answer : 21.6 ha

• Question No. 78

Device used for measuring water flow in pipes

Options :

1. Venturi meter
2. Weir
3. Parshall flume
4. Cutthroat flume
- 5.

Answer : Venturi meter

• Question No. 79

Which stages are the most sensitive to water deficit in groundnut?

Options :

1. Vegetative and flowering
2. Flowering and pegging
3. Flowering and pod formation
4. Vegetative and pod development
- 5.

Answer : Flowering and pegging

• Question No. 80

The ratio of average depth of water stored in root zone soil depth during irrigation to the water diverted from the reservoir is known as

Options :

1. Operational efficiency
2. Project efficiency
3. Water convergence efficiency
4. Reservoir detention factor
- 5.

Answer : Project efficiency

- Question No. 81

The correct order of crops with respect to their water requirement

Options :

1. Rice > Cotton > Maize > Wheat > Pea
2. Rice > Maize > Cotton > Pea > Wheat
3. Rice > Pea > Maize > Cotton > Wheat
4. Rice > Cotton > Maize > Pea > Wheat
- 5.

Answer : Rice & Cotton & Maize & Wheat & Pea

- Question No. 82

Water requirement satisfaction index (WRSI) can be computed using the information on seasonal actual evapotranspiration (AET) and seasonal crop water requirement.

Options :

1. $WRSI = AET / WR \times 100$
2. $WRSI = (AET \times WR) / 100$
3. $WRSI = WR / AET \times 100$
4. $WRSI = (WR - AET) / WR \times 100$
- 5.

Answer : $WRSI = AET / WR \times 100$

- Question No. 83

Match List I with List II

The crop coefficient (Kc) for major crops at harvest

List I	List II
--------	---------

Crop	Kc value
A. Maize	I. 0.50-0.60
B. Sorghum	II. 0.55-0.60
C. Soybean	III. 0.65-0.70
D. Cotton	IV. 0.40-0.50

Choose the correct answer from the options given below:

Options :

1. A-II, B-I, C-IV, D-III
2. A-IV, B-III, C-II, D-I
3. A-I, B-II, C-III, D-IV
4. A-III, B-IV, C-I, D-II
- 5.

Answer : A-II, B-I, C-IV, D-III

- Question No. 84

Actual evapotranspiration equals maximum evaporation (ETO) when

- A. Soil mixture not constraint
- B. Other factors not constraint
- C. Both A and B
- D. A but not B

Choose the correct answer from the options given below:

Options :

1. A only

2. B only
3. C only
4. D only
- 5.

Answer : C only

• Question No. 85

A wheat crop grown on two hectare area produced 10 ton grain and required 5 irrigations of 6 cm each, find out its field water use efficiency

Options :

1. 33.33 kg/ha-mm
2. 16.67 kg/ha-mm
3. 3.33 kg/ha-mm
4. 1.67 kg ha-mm
- 5.

Answer : 16.67 kg/ha-mm

• Question No. 86

Essentiality of zinc in plant was discovered in 1926 by

Options :

1. D.I. Amon and P.R. Stout
2. A.L. Sommer and C.P. Lipman
3. Sprengel
4. K. Warington
- 5.

Answer : A.L. Sommer and C.P. Lipman

- Question No. 87

Brays No. 1 reagent consists of mixture of

Options :

1. 0.03 NNH₄F+0.025 NHC1
2. 0.3 NNH₄F+0.025 N HC1
3. 0.03 NNH₄F +0.25 N HC1
4. 0.3 N NH₄F +0.25 NHC1
- 5.

Answer : 0.03 NNH₄F+0.025 NHC1

- Question No. 88

The primary raw material used for commercial manufacturing of Muriate of Potash fertilizer

Options :

1. Sylvite
2. Sylvinite
3. Langbeinite
4. Schoenite
- 5.

Answer : Sylvinite

- Question No. 89

Mitscherlich's equation is expressed by the equation

Options :

1. $\log (A+Y) = \log A - Cb$
2. $\log (A-Y) = \log A - Cb$
3. $\log (A-Y) = \log A + Cb$

4. $\log (A-Y) = \log A - Cb^2$

5.

Answer : $\log (A-Y) = \log A - Cb$

• Question No. 90

Among the followings, nitrification inhibitor is

Options :

1. Encapsulated calcium carbide
2. Lac coated urea
3. Urea formaldehyde
4. Sulphur coated urea
- 5.

Answer : Encapsulated calcium carbide

• Question No. 91

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: Nickel is essential for the function of urease enzyme.

Reason R: Nickel helps in breaking down urea into NH_3 and CO_2 .

In light of the above statements, choose the most appropriate answer from the options given below

Options :

1. Both A and R are correct and R is the correct explanation of A
2. Both A and R are correct but R is NOT the correct explanation of A
3. A is correct but R is not correct
4. A is not correct but R is correct
- 5.

Answer : Both A and R are correct and R is the correct explanation of A

• Question No. 92

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: The synergistic positive effects of integrated nutrient management (INM) are due to better physical properties of soil, higher root growth and supply of secondary and micronutrients.

Reason R: Site specific nutrient management (SSNM) provides scientific principles for optimally supporting crops with nutrients as and when needed for specific fields in a particular cropping season and cropping system.

In light of the above statements, choose the most appropriate answer from the options given below

Options :

1. Both A and R are correct and R is the correct explanation of A
2. Both A and R are correct but R is NOT the correct explanation of A
3. A is correct but R is not correct
4. A is not correct but R is correct
- 5.

Answer : Both A and R are correct but R is NOT the correct explanation of A

• Question No. 93

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: Integrated use of phosphatic fertilizers and organic manure/crop residues increases P use efficiency by reducing P-fixation in soils.

Reason R: Decrease in P-fixation in presence of organic matter in soils may be ascribed by formation of phosphohumic complexes that are easily assimilated by plants and formation of coating on the surface of sesquioxide particles.

In light of the above statements, choose the most appropriate answer from the options given below

Options :

1. Both A and R are correct and R is the correct explanation of A

2. Both A and R are correct but R is NOT the correct explanation of A
3. A is correct but R is not correct
4. A is not correct but R is correct
- 5.

Answer : Both A and R are correct and R is the correct explanation of A

• Question No. 94

Given below are two statements

Statement I: Acid sulphate soil is formed due to formation of Jarosite.

Statement II: Acid sulphate soil is found in Himachal Pradesh.

In light of the above statements, choose the most appropriate answer from the options given below

Options :

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct
- 5.

Answer : Statement I is correct but Statement II is incorrect

• Question No. 95

Given below are two statements

Statement I: Use efficiency of fertilizer NPK can be improved by following integrated nutrient management (INM).

Statement II: Integrated nutrient management (INM) utilizes the use of organic manure, inorganic fertilizers and bio fertilizers.

In light of the above statements, choose the most appropriate answer from the options given below

Options :

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct
- 5.

Answer : Both Statement I and Statement II are correct

• Question No. 96

Match List I with List II

List I	List II
A. Sulphur	I. Reddish colour on green leaves or stem appearing on older leaves
B. Phosphorus	II. Chlorosis starting from leaf tips appearing on older leaves
C. Nitrogen	III. Youngest leaf is brownish or dead (e.g. on beet)
D. Boron	IV. Mottled yellow-green leaves with yellowish veins appearing on younger leaves

Choose the correct answer from the options given below:

Options :

1. A-II, B-IV, C-III, D-I
2. A-II, B-III, C-I, D-IV
3. A-I, B-II, C-III, D-IV
4. A-VI, B-I, C-II, D-III
- 5.

Answer : A-VI, B-I, C-II, D-III

- Question No. 97

Match List I with List II

List I	List II
A. Bray	I. Law of diminishing return
B. Mitscherlich	II. Per cent yield concept
C.O.W. Wilcox	III. Nutrient Index
D. Parker	IV. Inverse Nitrogen-Yield concept

Choose the correct answer from the options given below:

Options :

1. A-II, B-IV, C-III, D-II
2. A-II, B-II, C-I, D-IV
3. A-II, B-I, C-IV, D-III
4. A-IV, B-III, C-II, D-I
- 5.

Answer : A-II, B-I, C-IV, D-III

- Question No. 98

Statements:

- A. Magnesium deficiency symptom shows the first appearance of chlorosis mainly between veins (which remain green).
- B. Iron deficiency causes interveinal chlorosis which first appears in older leaves with distinct green veins.
- C. Manganese deficiency causes brownish black spots in pea and grey speck of oat.
- D. Boron deficiency shows brownish or reddish young leaves and growing points of shoot and roots die.

Choose the correct answer from the options given below:

Options :

1. A, B and C only
2. A, B and D only
3. A, C and D only
4. B, C and D only
- 5.

Answer : A, C and D only

• Question No. 99

Potassium helps in maintaining cytoplasmic pH between

Options :

1. 7 and 8
2. 6 and 7
3. 5 and 6
4. 4 and 5
- 5.

Answer : 7 and 8

• Question No. 100

Given below are two statements

Statement I: Plants absorb nitrogen from the soil solution as nitrate (NO_3^-) and as ammonium (NH_4^+) ions.

Statement II: The content of N in healthy plants ranges between 1 and 5% depending upon the species or variety.

In light of the above statements, choose the most appropriate answer from the options given below

Options :

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect

3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct
- 5.

Answer : Both Statement I and Statement II are correct

• Question No. 101

When rainfall is inadequate to meet the evapotranspiration losses, usually occurs in humid region

- A. Invisible drought
- B. Contingent drought
- C. Meteorological drought
- D. Permanent drought

Choose the correct answer from the options given below:

Options :

1. A only
2. B only
3. C only
4. D only
- 5.

Answer : A only

• Question No. 102

Given below are two statements

Statement I: Plants can tolerate drought either by mitigating the actual stress or by showing a high degree of tolerance to stress.

Statement II: Plants tolerate the stress by showing resistance to dehydration and by preventing leaf collapse, permit the plants to maintain a high internal water potential in spite of drought conditions.

In light of the above statements, choose the correct answer from the options given below

Options :

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true
- 5.

Answer : Statement I is true but Statement II is false

- Question No. 103

Match List I with List II

List I	List II
Year	Events
A. 1920	I. Royal Commission on Agriculture
B. 1942	II. Central Soil Conservation Board
C. 1953	III. ICRISAT
D. 1972	IV. Bombay Land Development Act

Choose the correct answer from the options given below:

Options :

1. A-I, B-IV, C - II, D - III
2. A - II, B - I, C - III, D -IV
3. A-III, B - I, C - IV, D - II
4. A-IV, B -III, C - I, D - II

5.

Answer : A-I, B-IV, C – II, D - III

• Question No. 104

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**:

Assertion A: Break of monsoon at critical stages for soil moisture stress leads to reduction in yield.

Reason R: Only when the break of monsoon exceeds 15 days duration or more.

In light of the above statements. choose the correct answer from the options given below

Options :

1. Both A and R are true and R is the correct explanation of A
2. Both A and R are true but R is NOT the correct explanation of A
3. A is true but R is false
4. A is false but R is true
- 5.

Answer : Both A and R are true and R is the correct explanation of A

• Question No. 105

Under inter-row water harvesting, the furrows of about 30-40 cm with depth of _____ are alternated by ridges of 60-70 cm.

- A. 10 cm
- B. 15 cm
- C. 20 cm
- D. 25 cm

Choose the correct answer from the options given below:

Options :

1. A only
2. B only
3. C only
4. D only
- 5.

Answer : B only

• Question No. 106

Match List I with List II According to De Martonne's classification

List I	List II
Indices	Vegetation condition
A. < 30	I. True desert
B. 20-30	II. Dry steepe
C. 10-20	III. Prairies
D. > 5	IV. Forest vegetation

Choose the correct answer from the options given below:

Options :

1. A-IV, B - III, C - II, D - I
2. A-III, B - IV, C - I, D -II
3. A-II, B - IV, C - I, D - III
4. A - III, B - II, C - I, D - IV
- 5.

Answer : A-IV, B - III, C - II, D - I

- Question No. 107

Which one of the following is radiation reflecting anti-transparent?

Options :

1. CCC-2
2. Kaolin
3. Mobi-leaf
4. Phenyl mercuric acetate
- 5.

Answer : Kaolin

- Question No. 108

Intercropping is possible in regions receiving 600-750 mm of rainfall and having effective growing season in weeks of

Options :

1. 10-15
2. 15-20
3. 20-30
4. 30-40
- 5.

Answer : 20-30

- Question No. 109

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: In a typical watershed project, development is started at the top of drainage basin and proceeds down the slopes to lowlands

Reason R: Upper reaches in the watershed are occupied mostly by forests which are often degraded and most in need of repair: also treating upper parts of basin reduce runoff and thus protects lower lands.

In light of the above statements, choose the correct answer from the options given below

Options :

1. Both A and R are true and R is the correct explanation of A
2. Both A and R are true but R is NOT the correct explanation of A
3. A is true but R is false
4. A is false but R is true
- 5.

Answer : Both A and R are true and R is the correct explanation of A

• Question No. 110

Match List I with List II IMD uses the aridity index on the basis of $(PE-AE)/PE$ to assess fortnight drought situation over India

List I	List II
Aridity class	Index value
A. Non-arid	I. 26-50
B. Mild	II. >50
C. Moderate	III. 0 or less
D. Severe	IV. 1-25

Choose the correct answer from the options given below:

Options :

1. A-IV. B-III. C-II. D-I
2. A-III B-IV. C-I. D-II
3. A-II. B-IV. C-III, D-I

4. A-III. B-II. C-I. D-IV

5.

Answer : A-III B-IV. C-I. D-II

• Question No. 111

India Meteorological Department has been using long range or seasonal forecast for the SW monsoon rainfall during June - September since

Options :

1. 1883

2. 1884

3. 1885

4. 1886

5.

Answer : 1886

• Question No. 112

Given below are two statements

Statement I: Periodically, a phenomenon called as southern oscillation that is a global scale see-saw in surface pressure with center of action near Indonesia - North Australia in one side and South-east Pacific region in the other side occurs and when it occurs the above mentioned normal situation greatly changes.

Statement II: Pressure rises in the Indonesian region and as a consequence the steady Trade wind diminish and may even change direction.

In light of the above statements. choose the correct answer from the options given below

Options :

1. Both Statement I and Statement II are true

2. Both Statement I and Statement II are false

3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true
- 5.

Answer : Both Statement I and Statement II are true

• Question No. 113

Drought prone area programme (DPAP) was launched in

Options :

1. 1970
2. 1975
3. 1973
4. 1968
- 5.

Answer : 1973

• Question No. 114

The characteristics of saline-alkali soils are

- A. $\text{pH} > 8.5$
- B. pH
- C. $\text{EC} > 4 \text{ dS/m}$
- D. EC
- E. $\text{ESP} > 15$

Choose the correct answer from the options given below:

Options :

1. A, B and C Only

2. B, C and E Only
3. A, D and E Only
4. A, C and E Only
- 5.

Answer : B, C and E Only

• Question No. 115

Given below are two statements

Liming of acid soils with limestone and/or basic slag helps in neutralizing exchangeable aluminium (Al^{3+}) and increasing pH of soils to a desired level.

Over-liming of acid soils has adverse effect on soil nutrient availability, particularly of micronutrients (Zn, Cu, Fe and Mn) and crop growth.

Choose the correct answer from the options given below:

Options :

1. Both A is and B are correct
2. Only A is correct
3. Only B is correct
4. Both A and B are incorrect
- 5.

Answer : Both A is and B are correct

• Question No. 116

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: Sodic or alkali soils can be reclaimed by application of calcium carbonate (CaCO_3).

Reason R: Removal of excess salts to a desired level in the rooting zone is the basic principal of reclamation of saline soils.

In light of the above statements, choose the most appropriate answer from the options given below

Options :

1. Both A and R are correct and R is not the correct explanation of A
2. A is correct but R is not correct
3. A is not correct but R is correct
4. Both A and R are correct and R is the correct explanation of A
- 5.

Answer : A is not correct but R is correct

• Question No. 117

When P_i is productivity per unit input of the limited or non-renewable resource, S_i is alteration in soil properties, W_i is change in water resource and quality, C_i modification in climatic factor and t is the time, the index of sustainability (I_s) can be computed as

Options :

1. $I_s = (P_i \times S_i \times W_i \times C_i) / t$
2. $I_s = f((P_i \times S_i \times W_i \times C_i) / t)$
3. $I_s = f(P_i + S_i + W_i + C_i) \times t$
4. $I_s = [f(P_i + S_i + W_i + C_i)] / t$
- 5.

Answer : $I_s = f((P_i \times S_i \times W_i \times C_i) / t)$

• Question No. 118

In shifting cultivation, the shifting cycle has been shrunk to about 5 years or even below 5 years, mainly due to

Options :

1. Increase in soil fertility
2. Decrease in population of tribal farmers practicing shifting cultivation
3. Increase in population of tribal farmers

4. Quality of produce from shifting cultivation is high
- 5.

Answer : Increase in population of tribal farmers

- Question No. 119

Distillery effluents also known as spent wash is a nutrient rich material and can be applied

Options :

1. Directly to soil only
2. As irrigation water only
3. Directly to soil and as irrigation water
4. Mostly as foliar spray
- 5.

Answer : As irrigation water only

- Question No. 120

Given below are two statements

Statement I: Conservation agriculture is congenial for formation of soil aggregates and humus, leading to improved soil structure, soil porosity and pore size distribution.

Statement II: Adoption of conservation agriculture results in increased crusting and surface sealing and decreased soil water storage capacity.

In light of the above statements, choose the correct answer from the options given below

Options :

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

5.

Answer : Statement I is true but Statement II is false

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