

## PREVIEW QUESTION BANK

Module Name : Soil Science - 63-ENG  
Exam Date : 29-Jun-2024 Batch : 14:30-16:30

| Sr. No.            | Client Question ID | Question Body and Alternatives                                                                                                                                                                                                                                                                                               | Marks | Negative Marks |
|--------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------|
| Objective Question |                    |                                                                                                                                                                                                                                                                                                                              |       |                |
| 1                  | 201                | <p>Movement of DNA from one bacterium to another through a tubular bridge or pilus:</p> <ol style="list-style-type: none"> <li>1. Conjugation</li> <li>2. Transposition</li> <li>3. Transfection</li> <li>4. Transduction</li> </ol> <p>A1 : 1</p> <p>A2 : 2</p> <p>A3 : 3</p> <p>A4 : 4</p>                                 |       |                |
| Objective Question |                    |                                                                                                                                                                                                                                                                                                                              |       |                |
| 2                  | 202                | <p>Which of the following is responsible for eliminating toxic oxygen by-products from cells?</p> <ol style="list-style-type: none"> <li>1. Mitochondria</li> <li>2. Golgi complex</li> <li>3. Peroxisomes</li> <li>4. Chloroplasts</li> </ol> <p>A1 : 1</p> <p>A2 : 2</p> <p>A3 : 3</p> <p>A4 : 4</p>                       |       |                |
| Objective Question |                    |                                                                                                                                                                                                                                                                                                                              |       |                |
| 3                  | 203                | <p>A form of multiple parasitism in which a parasite preferentially attacks a host that is already parasitized by another species is known as</p> <ol style="list-style-type: none"> <li>1. Cleptoparasitism</li> <li>2. Ectoparasitoid</li> <li>3. Obligate parasitism</li> <li>4. Superparasitism</li> </ol> <p>A1 : 1</p> |       |                |

A2 : 2

A3 : 3

A4 : 4

## Objective Question

4 204

For mass multiplication of DD-136 nematode, the common host used is

1. Silk moth
2. Fruit sucking moth
3. Codling moth
4. Lesser wax moth

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

5 205

Chlorpyrifos methyl is effective against stored product insects except

1. *Rhizopertha dominica*
2. *Tribolium castaneum*
3. *Caryedon serratus*
4. *Oryzaephilus surinamensis*

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

6 206

Which of the following insects often cause inhalational allergies in human following large emergence of adult insects

1. Stick insects
2. May flies
3. Ear wigs
4. Preying mantis

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

7 207

Given below are two statements:

Statement (I): Climate is a weather condition related to smaller areas at a given place and at a given time,

Statement (II): Weather is a condition of atmosphere at a given place and at a given time

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

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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

8 208

The local name of cyclone in Phillippines is

1. Hurricane
2. Cyclone
3. Baquio
4. Typhoon

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

9 209

Which one of the following are secondary tillage implements?

- (A). Subsoiler
- (B). Cultivator
- (C). Disc harrow
- (D). Wetland plough

Choose the **correct** answer from the options given below:

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

#### Objective Question

10 210

\_\_\_\_\_ is the most suitable, drought resistant and persistent grass?

- 1. *Alylosia* sp.
- 2. *Cenchrus ciliaris*
- 3. *Stylosanthes hamata*
- 4. *Sorghum bicolor*

A1 : 1

A2 : 2

A3 : 3

A4 : 4

#### Objective Question

11 211

The rainfed area in India is approximately

- 1. 30 mha
- 2. 40 mha
- 3. 57 mha
- 4. 70 mha

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

12 212 Which nutrient is often a limiting factor in agricultural production?

1. Nitrogen
2. Carbon
3. Oxygen
4. Hydrogen

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

13 213 What is a potential disadvantage of agroforestry systems?

1. Increased soil erosion
2. Decreased carbon sequestration
3. Reduced biodiversity
4. Enhanced susceptibility to pests

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

14 214 Pungency in mustard oil is due to

1. Amino acid
2. Allyl isothiocyanate
3. Erusic acid
4. Oxalic acid

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

15 215

Sesamum belongs to the family

1. Chenopodiaceae
2. Papilionaceae
3. Leguminosae
4. Pedaliaceae

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

16 216

Dark period is critical in which type of plant?

1. Short day plant
2. Long day plant
3. Day neutral plant
4. All the options

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

17 217

Which of the following is NOT a significant contributor to greenhouse gas emissions from livestock farming?

1. Carbon dioxide
2. Methane
3. Nitrous oxide
4. Ammonia

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

18 218

Fe deficiency is mostly seen in crops growing on

1. Calcareous or alkaline soils
2. Salt affected soils
3. Acidic soils
4. Neutral soils

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

19 219

EDV (Essentially Derived Varieties) are those which are derived from:

1. crossing two commercially known varieties
2. hybrid introduced from other countries
3. existing variety through genetic engineering or mutation
4. crossing commercially known variety with its wild relative

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

20 220

What is the role of "companion planting" in agriculture?

1. Enhancing soil fertility through crop rotation
2. Growing different crop species together to deter pests
3. Cultivating plants in hydroponic system
4. Increasing soil compaction through cover cropping

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

21 2601

Given below are two statements:

Statement (I): In Indian sub-continent, about one-fifth of total geographical area is affected by drought in every 10 years.

Statement (II): In Indian sub-continent, about one-third of total geographical area is affected by drought in every 15 years.

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

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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

22 2602

Given below are two statements:

Statement (I): De Saussure concluded that the carbon contained by plants was derived from the soil.

Statement (II): Sir Humphry Davy stated that plants received most of the carbon from atmospheric air.

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

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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

23 2603



Correct sequence of states as per increasing order of plant nutrient (NPK) consumption for the year 2021-22 in

1. Maharashtra < Gujarat < Andhra Pradesh < Telangana < Haryana
2. Gujarat < Maharashtra < Haryana < Andhra Pradesh < Telangana
3. Gujarat < Maharashtra < Telangana < Andhra Pradesh < Haryana
4. Telangana < Andhra Pradesh < Gujarat < Maharashtra < Haryana

A1 : 1

A2 : 2

A3 : 3

A4 : 4

#### Objective Question

24 2604

The weed density in a control plot (weedy check) is 50 per sq. m and in a herbicide treated plot 35 per sq. m, calculate weed control efficiency (%).

1. 30.0
2. 42.9
3. 60.0
4. 85.7

A1 : 1

A2 : 2

A3 : 3

A4 : 4

#### Objective Question

25 2605

Which of the following principles of system of rice intensification (SRI) largely forced many farmers to disadopt it?

- (A). Young seedlings and single seedling/hill
- (B). Wider spacing
- (C). Mechanical weeding
- (D). Intermittent irrigation
- (E). Use of organic manure

Choose the **correct** answer from the options given below:

1. (A), (B) and (D) only.
2. (A), (C) and (E) only.
3. (B), (C) and (D) only.
4. (B), (D) and (E) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

26 2606

Which among the followings is not the characteristic of the durum wheat?

1. Blades of the durum wheat leaves are usually narrower than those of bread wheat.
2. Durum wheat kernels are harder and heavier than bread wheat.
3. Durum wheat kernels are typically larger than that of bread wheat.
4. The dough of durum wheat is less elastic than the bread wheat.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

27 2607

Topping and de-suckering are not practised generally for which type of tobacco?

1. Chewing tobacco
2. Cigar tobacco
3. Wrapper tobacco
4. *Bidi* tobacco

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

28 2608

The operational range for electrical resistance block is

1. 0 to -0.85 bars
2. 0 to -100 bars
3. 0.5 to -50 bars
4. -0.1 to -15 bars

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

29 2609

Calculate the seed rate of rice in kg/La , if the spacing of hills for transplanting is 20cm x 20cm ; number of seedlings / hill is 2; germination percentage of seeds is 90; purity percentage of seeds is 90; test weight of rice seed is 25 g; damaged seedlings during uprooting from the nursery is 20% of the uprooted seedlings.

1. 15.4
2. 18.5
3. 9.6
4. 19.3

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

30 2610

The term variance is used to denote:

1. Standard deviation
2. Square of the standard deviation
3. Square root of the standard deviation
4. Average of differences from the mean

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

31 2611

Which of the following types of tobacco has highest nicotine content?

1. *Bidi* tobacco
2. Cigar tobacco
3. Chewing tobacco
4. Cigar wrapper tobacco

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

32 2612

What is the field water-use efficiency in kg/ha-mm of wheat crop, if it yields 4.5 t/ha grain and water requirement is 45 cm?

1. 0.1
2. 10
3. 100
4. 1000

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

33 2613

Which experimental design is a single factor design?

1. Factorial RCB design
2. Split-plot design
3. Latin square design
4. Strip-plot design

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

34 2614

Which of the following agenda is not contributed by the International year of Millets 2023 to the UN 2030 Agenda for sustainable development?

1. Life on land
2. Decent work and economic growth
3. Nutrition for the most vulnerable
4. Responsible consumption and production

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

35 2615

The time required to complete hydrolysis of urea when applied in normal soil and alkline soils, respectively is

1. 2-3 days in normal soil, and 4 days in alkaline soil.
2. 1-2 days in normal soil, and 5 days in alkaline soil.
3. 1-2 days in normal soil, and 10 days in alkaline soil.
4. 2-3 days in normal soil, and 7 days in alkaline soil.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

36 2616

Diagnosis and recommendation integrated system (DRIS) approach was developed by:

1. Olsen
2. Leibig
3. Beaufils
4. Arnon

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

37 2617

Clay mineral having largest specific surface area is

1. Kaolinite
2. Montmorillonite
3. Smectite
4. Illite

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

38 2618

The most dominant soil order in India is:

1. Entisol
2. Alfisol
3. Inceptisol
4. Mollisol

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

39 2619

Minerals containing iron are:

- (A). Hematite
- (B). Goethite
- (C). Sphalerite
- (D). Magnetite

Choose the **correct** answer from the options given below:

1. (A), (B) and (D) only.
2. (A), (B) and (C) only.
3. (A), (B), (C) and (D).
4. (B), (C) and (D) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

40 2620

Given below are two statements:

Statement (I): Iron deficiency is most common in upland crops, particularly those grown on the calcareous/alkaline soils of arid region.

Statement (II): Molybdenum is associated with nitrogenase and nitrate reductase enzymes and is essential for nitrogen fixing plants and microorganisms.

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

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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

#### Objective Question

41 2621

Solubility of Fe(III) oxides decreases in the order:

- (A).  $\alpha\text{-Fe}_2\text{O}_3$  (Hematite)
- (B).  $\alpha\text{-FeOOH}$  (Ggoethite)
- (C).  $\gamma\text{-Fe}_2\text{O}_3$  (Maghemite)
- (D).  $\gamma\text{-FeOOH}$  (Lepidocrocite)

Choose the **correct** answer from the options given below:

1. (C), (B), (A), (D).
2. (A), (B), (C), (D).
3. (B), (A), (D), (C).
4. (C), (D), (A), (B).

A1 : 1

A2 : 2

A3 : 3

A4 : 4

#### Objective Question

42 2622

The production of single superphosphate (SSP) involves following operations:

(A). The powdered rock phosphate (containing 30%-38% total  $P_2O_5$ ) is mixed with sulphuric acid (65%-75%  $H_2SO_4$ ) to form a slurry.

(B). The wet material is subjected to final curing, when some of the slow reactions reach a state of near completion and the excess water evaporates. The curing time is 2-6 weeks.

(C). Solidification of the slurry in a den (denning), where continued reactions and crystallization of monocalcium phosphate take place (time required 0.5 to 4 hours).

(D). If granular SSP is desired, it can be granulated either before or after it is cured.

Choose the **correct** answer from the options given below:

1. (A), (B) and (D) only.
2. (A), (B) and (C) only.
3. (A), (B), (C) and (D).
4. (B), (C) and (D) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

#### Objective Question

43 2623

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

Assertion (A) : Dehydrogenase activity reflects the total range of the oxidative activity of soil microorganisms and may be considered a good indicator of the oxidative metabolism in soils.

Reason (R) : Dehydrogenase oxidizes soil organic matter by transferring protons and electrons from organic substrates to inorganic acceptors.

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

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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

#### Objective Question

44 2624



Most weathered soil order is

1. Inceptisols
2. Vertisols
3. Oxisols
4. Alfisols

A1 : 1

A2 : 2

A3 : 3

A4 : 4

#### Objective Question

45 2625

Match **List-I** with **List-II**

| List-I             | List-II                                            |
|--------------------|----------------------------------------------------|
| (Nutrient element) | (Enzymes)                                          |
| (A). Copper        | (I). Nitrogenase and nitrate reductase             |
| (B). Iron          | (II). Ascorbic acid oxidase and polyphenol oxidase |
| (C). Zinc          | (III). Catalase and peroxidase                     |
| (D). Molybdenum    | (IV). Carbonic anhydrase and dehydrogenase         |

Choose the **correct** answer from the options given below:

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

#### Objective Question

46 2626

Calcium requirement is highest for:

1. Cereals
2. Legumes
3. Oil seeds
4. Forage crops

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

47 2627

Nicotine is found in tobacco plant and it is used as insecticide. It is a

1. Limonoid
2. Terpenoid
3. Carotenoid
4. Alkaloid

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

48 2628

Bordeaux mixture composed of

1.  $\text{CaSO}_4$  and  $\text{CuO}$
2.  $\text{CuSO}_4$  and  $\text{CuO}$
3.  $\text{CuSO}_4$  and  $\text{CaO}$
4.  $\text{CaSO}_4$  and  $\text{CaO}$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

49 2629

Imazethapyr is a

1. Selective broad spectrum herbicide
2. Non-selective broad spectrum herbicide
3. Selective herbicide for grasses
4. Selective herbicide for broad leaves

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

50 2630

Ideal range of absorbance for accepting data from spectrophotometer is

1. 0.1-0.5
2. 0-1
3. 0.2-1.5
4. 0.2-0.8

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

51 2631

Jasmolin is found in which of the following plant

1. *Tinospora sp.*
2. *Gimnema sp.*
3. *Anthocephalas sp.*
4. *Tanacetum sp.*

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

52 2632

Essential oil is mainly comprised of

1. Monoterpenes
2. Diterpenes
3. Limonins
4. Acetogenins

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

53 2633

Pungent principle of chilli is

1. Capxanthin
2. Capsaicin
3. Chalcone
4. Capsirubin

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

54 2634

EW formulation of pesticide is a

1. Emulsion
2. Solution
3. Colloid
4. Suspension

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

55 2635

"Matador" is the trade name of which herbicide ?

1. Metsulfuron-methyl
2. Metribuzin
3. Sulfosulfuron
4. Glyphosate

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

56 2636

Solution of 2% concentration is equivalent to

1. 200 ppm
2. 2000 ppm
3. 20000 ppm
4. 200000 ppm

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

57 2637

Quality Protein Maize (QPM) is richer in which of the following amino acid than normal maize ?

1. Lysine and Glycine
2. Glycine and Aspartic acid
3. Lysine and Tryptophan
4. Histidine and Proline

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

58 2638

CIB&RC is a Govt. body located at

1. Ghazhibad
2. Faridabad
3. Delhi
4. Gurugram

A1 : 1

A2 : 2

A3 : 3

A4 : 4

#### Objective Question

59 2639

The estimated total utilizable surface water resources of India is

1. 433 BCM
2. 690 BCM
3. 1123 BCM
4. 4000 BCM

A1 : 1

A2 : 2

A3 : 3

A4 : 4

#### Objective Question

60 2640

Given below are two statements:

Statement (I): The slope of mass curve shows the intensities at various time intervals in a storm.

Statement (II): Hyetograph is derived from the mass curve.

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

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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

61 2641

Given below are two statements related to peak rate of runoff:

Statement (I): The factors related to retardance to flow caused by the effect of surface detention and channel storage considered.

Statement (II): The runoff coefficient is dependent only on watershed characteristics.

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

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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

62 2642

Soil moisture tension in a salt free soil at field capacity depending on soil texture ranges from

1. 7 to 32 atmosphere
2. 0.7 to 7 atmosphere
3. 0.01 to 0.7 atmosphere
4. < 0.01 atmosphere

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

63 2643

Surangam, water harvesting structures are found in

1. Bellary
2. Tamil Nadu
3. Kasargod
4. Telangana

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

64 2644

Which of the following is a traditional rainwater harvesting technique practiced in rainfed agriculture?

1. Desalination
2. Drip irrigation
3. Contour bunding
4. Sprinkler irrigation

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

65 2645

Which of the following irrigation scheduling methods relies on soil moisture measurements to determine when irrigation is needed?

1. Calendar-based scheduling
2. Crop water stress index (CWSI)
3. Pan evaporation method
4. Soil moisture sensors

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

66 2646

What is the term used to describe the process of using vegetation to enhance water drainage and stabilize soil in agricultural landscapes?

1. Terracing
2. Riparian buffers
3. Vegetative filter strips
4. Subsurface drains

A1 : 1



A2 : 2

A3 : 3

A4 : 4

## Objective Question

67 2647

Which factor is NOT a consideration in groundwater management?

1. Rate of groundwater recharge
2. Extraction rate
3. Depth of the water table
4. Surface water availability

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

68 2648

What is the term used to describe the process of lowering the water table around a well due to excessive pumping, resulting in reduced water availability?

1. Aquifer depletion
2. Cone of depression
3. Pumping efficiency
4. Hydraulic fracturing

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

69 2649

What is the primary advantage of pressurized irrigation systems over traditional gravity-based systems?

1. Reduced water use
2. Lower initial investment
3. Higher application efficiency
4. Greater flexibility in crop selection

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

70 2650

What is the term used to describe the process of using plants to remove pollutants from soil and water?

1. Phyto sorption
2. Phytoextraction
3. Phytoremediation
4. Phyto stabilization

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

71 1003251

Pick out the correct sequence of elemental presence (% by weight) in Earth's crust.

1.  $\text{Si}^{4+} > \text{Al}^{3+} > \text{O}^{2-} > \text{Fe}^{2+}$
2.  $\text{Si}^{4+} > \text{Al}^{3+} > \text{Fe}^{2+} > \text{O}^{2-}$
3.  $\text{O}^{2-} > \text{Si}^{4+} > \text{Al}^{3+} > \text{Fe}^{2+}$
4.  $\text{Si}^{4+} > \text{O}^{2-} > \text{Al}^{3+} > \text{Fe}^{2+}$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

72 1003252

Match **List-I** with **List-II**

| List-I              | List-II                      |
|---------------------|------------------------------|
| Name of the mineral | Mineral Group                |
| (A). Hornblende     | (I). Secondary silicate      |
| (B). Chlorite       | (II). Secondary non-silicate |
| (C). Goethite       | (III). Feldspar group        |
| (D). Anorthite      | (IV). Primary silicate       |

Choose the **correct** answer from the options given below:

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

73 1003253

Find out the correct mobility sequence (high to low mobility) of different elements or compounds in soil.

1.  $\text{SO}_4 > \text{Al}_2\text{O}_3 > \text{Ca} > \text{K}$
2.  $\text{SO}_4 > \text{Ca} > \text{K} > \text{Al}_2\text{O}_3$
3.  $\text{Al}_2\text{O}_3 > \text{SO}_4 > \text{Ca} > \text{K}$
4.  $\text{Ca} > \text{Al}_2\text{O}_3 > \text{K} > \text{SO}_4$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

74 1003254

Match **List-I** with **List-II**

| List-I                       | List-II                                                                                                  |
|------------------------------|----------------------------------------------------------------------------------------------------------|
| Name of soil-forming process | Process description                                                                                      |
| (A). Gleization              | (I). Removal of clay from the upper soil profile and deposition in the lower portion of the soil profile |
| (B). Ferruginisation         | (II). Removal of Fe and Al oxides from soil profile                                                      |
| (C). Podzolization           | (III). Release of Fe from primary minerals and coating on soil particles                                 |
| (D). Lessivage               | (IV). Reduction of Fe under anaerobic conditions                                                         |

Choose the **correct** answer from the options given below:

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

75 1003255

If the volume of soil solids is denoted as  $V_s$  and the volume of soil pores as  $V_f$ , which of the relationships between void ratio ( $e$ ) and porosity ( $f$ ) is correct

1.  $e = f/(1+e)$
2.  $f = e/(1+e)$
3.  $e = (1-f)/f$
4.  $f = e/(1+e)$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

76 1003256

If water is held in a soil at a suction of 1 bar, what will be the pF equivalent ?

1. 1.0
2. 3.0
3. 5.0
4. 2.0

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

77 1003257

Which of the following statements is true with respect to tensiometry ?

- (A). A tensiometer measures soil moisture content.
- (B). A tensiometer measures only matric suction.
- (C). A tensiometer measures the total soil water potential.
- (D). A tensiometer measures both matric and pneumatic potential.

Choose the **correct** answer from the options given below:

1. (A) and (D) only.
2. (B) only.
3. Both (B) and (C)
4. (B), (C) and (D)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

78 1003258

Under saturated water flow conditions in soil, which of the following is correct ?

1. Flux = Hydraulic conductivity  $\times$  hydraulic diffusivity  $\times$  hydraulic gradient
2. Flux = Hydraulic conductivity  $\times$  hydraulic diffusivity
3. Flux = Hydraulic conductivity / hydraulic diffusivity
4. Flux = Hydraulic conductivity  $\times$  hydraulic gradient

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

79 1003259

Match **List-I** with **List-II**

| List-I                            | List-II                        |
|-----------------------------------|--------------------------------|
| Name of Law                       | Described Process              |
| (A). Fick's law                   | (I). Entropy                   |
| (B). Darcy's Law                  | (II). Diffusion                |
| (C). Fourier's Law                | (III). Flow of water in column |
| (D). Second law of Thermodynamics | (IV). Heat transfer            |

Choose the **correct** answer from the options given below:

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

80 1003260

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

Assertion (A) : The medium-textured soils are often more susceptible to soil erosion.

Reason (R) : Silt and very fine sand content in soil increases the erodibility of soil.

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

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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

81 1003261

Which type of crust is found in sodic soils?

1. Infiltrating crust
2. Slaking crust
3. Sieving crust
4. Coalescing crust

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

82 1003262

Consider the following statements :

- (A). Aerial photographs are examples of analog images.
- (B). Images of remote sensing satellites acquired using electronic sensors are examples of digital images.
- (C). A digital image comprises of pixels, which have their digital numbers.
- (D). SPOT satellite is an example of a hyperspectral remote sensing satellite.

Choose the **correct** answer from the options given below:

1. (B) and (D) only.
2. (A), (B), (C) and (D)
3. (A), (C) and (D) only
4. (A), (B) and (C) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

83 1003263

Which of the following is the unsupervised method of digital image classification?

1. Parallelepiped classification algorithm
2. Minimum distance to means classification algorithm
3. K-means clustering algorithm
4. Maximum likelihood classification algorithm

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

84 1003264

Given below are two statements:

Statement (I): Uniformity coefficient in soil refers to the ratio of  $d_{60}$  to  $d_{10}$ .

Statement (II): A well graded loamy soil shall has lower uniformity coefficient than sand.

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

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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

85 1003265



Match **List-I** with **List-II**

| List-I                     | List-II                            |
|----------------------------|------------------------------------|
| Physical parameter         | Unit of measurement                |
| (A). Sorptivity            | (I). $\text{cm}^2 \text{sec}^{-1}$ |
| (B). Matric suction        | (II). $\text{cm}^{-1}$             |
| (C). Hydraulic diffusivity | (III). $\text{cm sec}^{-1/2}$      |
| (D). Wetness gradient      | (IV). cm                           |

Choose the **correct** answer from the options given below:

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

86 1003266

If the volume fractions of water content, mineral and organic constituents in a soil are 0.25, 0.50 and 0.25, what will be the volumetric heat capacity of soil in  $\text{cal/cm}^3$  ?

1. 0.50
2. 0.39
3. 0.84
4. 0.64

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

87 1003267

Read the following statements and choose the *correct* answer from the options given below:

- (A). Photographic camera is an active sensor when used in sunlight.
- (B). Photographic camera is a passive sensor when used in sunlight.
- (C). Radar and laser altimeter are active sensors.
- (D). Passive sensors are preferable when natural emittance or reflectance levels are low.

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

#### Objective Question

88 1003268

Which epipedon is dark coloured with base saturation <50% and remains moist for >9 months per year?

- 1. Mollic
- 2. Ochric
- 3. Umbric
- 4. Melanic

A1 : 1

A2 : 2

A3 : 3

A4 : 4

#### Objective Question

89 1003269

If cumulative horizontal infiltration of a soil is 90 mm at 100 min and saturated hydraulic conductivity of the soil is 0.1 mm/min, the cumulative vertical infiltration at 100 min will be

- 1. 80 mm
- 2. 90 mm
- 3. 110 mm
- 4. 100 mm

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

90 1003270

The actual pixel value is retained in which method of resampling?

1. Nearest neighbour interpolation
2. Bilinear interpolation
3. Cubic convolution
4. Both '2' and '3'

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

91 1003271

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

Assertion (A) : Soil and land, though related, are two different entities.

Reason (R) : Land is two-dimensional entity representing geographical area and landscape, while soil is a three-dimensional body with length, breadth and depth and is hidden below the land surface.

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

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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

92 1003272

Followings are some pedological processes that describe progression of additions, losses, transformation and translocation.

(A). Leaching (downward movement of soluble salts).

(B). Eluviation (transport of suspended soil material from upper to lower layers).

(C). Podsolization (acid led breakdown of clay minerals under humid forested regions).

(D). Illuviation (deposition of colloids, soluble salts and suspended clay from one soil layer to other carried downward by eluviation).

Choose the **correct** answer from the options given below:

1. (A), (B) and (C) only.
2. (A), (B) and (D) only.
3. (A), (B), (C) and (D).
4. (B), (C) and (D) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

#### Objective Question

93 1003273

Match **List-I** with **List-II**

| List-I            | List-II                              |
|-------------------|--------------------------------------|
| Nutrient elements | Uptake mechanisms                    |
| (A). Nitrogen     | (I). Mass flow and Root interception |
| (B). Phosphorus   | (II). Mass flow                      |
| (C). Potassium    | (III). Diffusion                     |
| (D). Calcium      | (IV). Mass flow and Diffusion        |

Choose the **correct** answer from the options given below:

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

94 1003274

The easily-weatherable minerals in order of increasing weathering indices are:

(A). Gypsum

(B). Olivine

(C). Calcite

(D). Biotite

Choose the **correct** answer from the options given below:

1. (A), (B), (C), (D).

2. (B), (A), (C), (D).

3. (B), (A), (D), (C).

4. (D), (B), (C), (A).

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

95 1003275

Calculate the ionic strength of a solution containing mixture of 0.02 *M* BaCl<sub>2</sub> and 0.1 *M* HCl

1. 0.80

2. 0.70

3. 0.65

4. 0.60

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

96 1003276

Match List-I with List-II

| List-I              | List-II                                                                                                                        |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------|
| (Nutrient elements) | (Functions/activities)                                                                                                         |
| (A). Boron          | (I). Involved in energy transfer, and transfer of genetic characteristics from one generation to the next.                     |
| (B). Zinc           | (II). Not a part of the chemical structure of plants, and plays a major role in catalysing activities of more than 60 enzymes. |
| (C). Potassium      | (III). Neither a constituent of enzymes nor it activates any of the enzymes.                                                   |
| (D). Phosphorus     | (IV). Constituent of enzymes such as carbonic anhydrase, alcoholic dehydrogenase and superoxide dismutase.                     |

Choose the **correct** answer from the options given below:

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

97 1003277

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

Assertion (A) : Barber (1995) defined the bio-available nutrient as the "one that is present in a pool of ions in the soil and can move to the plant root during plant growth if the root is close enough".

Reason (R) : Bray's (1954) concept of nutrient mobility suggests that anions like  $\text{NO}_3^-$ ,  $\text{Cl}^-$  or  $\text{HCO}_3^-$  are classified as "mobile" nutrients, while cations like  $\text{K}^+$ ,  $\text{Mg}^{2+}$  and  $\text{Ca}^{2+}$  are classified as "immobile" nutrients.

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

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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

98 1003278

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

Assertion (A) : Application of lime resulted in reduced adsorbed and solution  $\text{Al}^{3+}$ , thereby, Al toxicity potential is greatly reduced and increases yield potential.

Reason (R) : When lime is added to acid soils, exchangeable and solution  $\text{Al}^{3+}$  is reduced by precipitation as  $\text{Al}(\text{OH})_3$  with an increase in soil pH.

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

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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

99 1003279

Following materials can be used as ammenments in calcareous soils to reduce the calcareousness.

- (A). Alluminium sulphate
- (B). Ammonium polysulfide
- (C). Elemental sulphur
- (D). Sulphuric acid

Choose the *correct* answer from the options given below:

1. (A), (B) and (D) only.
2. (A), (B) and (C) only.
3. (A), (B), (C) and (D).
4. (B), (C) and (D) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question



|     |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 100 | 1003280 | <p>The anion part of the N-fertilizer plays prominent role in determining or producing soil acidity. Arrange these N-fertilizers with increasing equivalent acidity.</p> <p>(A). Ammonium sulphate</p> <p>(B). Ammonium chloride</p> <p>(C). Ammonium nitrate</p> <p>(D). Ammonium sulphate nitrate</p> <p>Choose the <b>correct</b> answer from the options given below:</p> <p>1. (A), (B), (C), (D).</p> <p>2. (C), (D), (A), (B).</p> <p>3. (B), (A), (D), (C).</p> <p>4. (C), (B), (D), (A).</p> <p>A1 : 1</p> <p>A2 : 2</p> <p>A3 : 3</p> <p>A4 : 4</p> |
|-----|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Objective Question

|     |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 101 | 1003281 | <p>Assumptions and Limitations of Stokes' Law:</p> <p>(A). Particles must be spherical, smooth and rigid. But, soil colloidal particles are plateshaped and fall slower than spherical particles of the same mass.</p> <p>(B). Size of particles must be large compared to the size of molecules of the liquid, so that the medium can be considered homogeneous, i.e. no Brownian movement occurs.</p> <p>(C). Fall must be unhindered. Particles falling very near the wall of the vessel (0.1 mm distance) are slowed down in their descent. Many fast falling particles may drag finer particles down along with them (concentration up to 3% solids).</p> <p>(D). Particles must be of uniform density and the suspension must be still without any turbulence.</p> <p>Choose the <b>correct</b> answer from the options given below:</p> <p>1. A), (B) and (C) only.</p> <p>2. (A), (B) and (D) only.</p> <p>3. (A), (B), (C) and (D).</p> <p>4. (B), (C) and (D) only.</p> <p>A1 : 1</p> <p>A2 : 2</p> <p>A3 : 3</p> <p>A4 : 4</p> |
|-----|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## Objective Question

102 1003282

The oxidizing agents are:

1. Potassium permanganate ( $\text{KMnO}_4$ ), potassium iodate ( $\text{KIO}_3$ ), potassium bromate ( $\text{KBrO}_3$ ), Ferrous chloride ( $\text{FeCl}_2$ ).
2. Potassium dichromate ( $\text{K}_2\text{Cr}_2\text{O}_7$ ), potassium iodate ( $\text{KIO}_3$ ), potassium bromate ( $\text{KBrO}_3$ ), sodium thiosulphate ( $\text{Na}_2\text{S}_2\text{O}_3$ ).
3. Potassium permanganate ( $\text{KMnO}_4$ ), potassium bromate ( $\text{KBrO}_3$ ), Ferrous chloride ( $\text{FeCl}_2$ ), stannous chloride ( $\text{SnCl}_2$ ).
4. Potassium permanganate ( $\text{KMnO}_4$ ), potassium dichromate ( $\text{K}_2\text{Cr}_2\text{O}_7$ ), potassium iodate ( $\text{KIO}_3$ ), potassium bromate ( $\text{KBrO}_3$ ).

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

103 1003283

Match List-I with List-II

| List-I           | List-II                                                                                                                                                                                                                                                                                                  |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (Soil Structure) | (Shape and characteristics)                                                                                                                                                                                                                                                                              |
| (A). Blocky      | (I). Peds are roughly granular and formed by biotic activities in surface horizon and promotes infiltration, percolation, aeration and root penetration in soils.                                                                                                                                        |
| (B). Prismatic   | (II). All the three dimensions of peds are of about same size. It is usually found in B-horizon and promotes good drainage, aeration and root penetration.                                                                                                                                               |
| (C). Platy       | (III). Peds are elongated more in vertical than in horizontal direction. The tops of peds may be angular and flat, or rounded. Commonly occurs in subsurface horizons in arid and semiarid regions, and in poorly drained soils of humid region having swelling type of clay.                            |
| (D). Spherical   | (IV). Horizontal axis is longer than vertical axis. Horizontal cleavage planes are predominant. Peds are thick, or thin, often inherited from parent material and may also be formed due to compaction of clayey soils by heavy machinery. It restricts infiltration, percolation and aeration in soils. |

Choose the **correct** answer from the options given below:

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

104 1003284

If, bulk density ( $\rho_b$ ) and particle density ( $\rho_s$ ) of a soil are  $1.5 \text{ Mg m}^{-3}$  and  $2.5 \text{ Mg m}^{-3}$ , respectively, then porosity (%) will be:

1. 40%
2. 35%
3. 45%
4. 50%

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

105 1003285

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

Assertion (A) : Quantity, intensity and buffering capacity are useful in describing and measuring the potassium (K) supplying power of soils where intensity factor describes the measure of K in soil solution that is immediately available for absorption by plant root.

Reason (R) : Since the absorption of K is influenced by the activity of other cations like  $\text{Ca}^{2+}$  and  $\text{Mg}^{2+}$  in the soil solution, the potassium activity ratio is used to indicate the intensity factor, in place of K concentration alone,

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

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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

106 1003286

The founder of the modern pedology who conceptualized the soil as an independent natural body and worked on soil genesis and classification is:

1. Kellogg and Thorp (1949)
2. Baldwin et al. (1938)
3. Dokuchaiev (1900)
4. Marbut (1927)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

#### Objective Question

107 1003287

Read the following statements:

- (A). Saline soils were formerly called white alkali because of the deposits of salts on the surface following evaporation.
- (B). Saline soils have an electrical conductivity of the saturated extract  $EC > 4 \text{ dS m}^{-1}$ .
- (C). Saline soils have  $pH > 8.5$ .
- (D). They have exchangeable sodium percentage (ESP)  $< 15\%$ .

Choose the **correct** answer from the options given below:

1. (A), (B) and (D) only.
2. (A), (B) and (C) only.
3. (A), (B), (C) and (D).
4. (B), (C) and (D) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

#### Objective Question

108 1003288

Sensitive crops like vegetables, fruits (citrus) and horticultural crops can tolerate biuret content in urea up to:

1. 0.15%
2. 0.25%
3. 1.5%
4. 2.5%

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

109 1003289

The main objectives of soil testing are:

(A). To evaluate soil fertility status for making fertilizer recommendations for a specific crop, field and farming situations.

(B). To predict crop response to fertilizer application.

(C). To classify soils into different fertility groups such as low, medium and high categories of soil fertility maps.

(D). To identify the type and extent of soil-related problems like salinity, alkalinity and acidity and to suggest appropriate reclamation/amelioration measures.

Choose the **correct** answer from the options given below:

1. (A), (B) and (C) only.
2. (A), (B) and (D) only.
3. (A), (B), (C) and (D).
4. (B), (C) and (D) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

110 1003290

The primary processes involved in salt accumulation in soils are:

(A). Weathering of rocks and parent materials.

(B). Low water table with less evaporative demand.

(C). Excessive application of salts in fertilizer, animal manure, or compost.

(D). Poor quality (high salt) irrigation water; irrigation mismanagement, with poor internal soil drainage.

Choose the **correct** answer from the options given below:

1. (A), (B) and (D) only.
2. (A), (B) and (C) only.
3. (A), (B), (C) and (D).
4. (A), (C) and (D) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

111 1003291

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

Assertion (A) : Neutron Moisture Meter consists of Americium and Beryllium or Radium and Beryllium as the neutron source.

Reason (R) : In case of Americium and Beryllium, fast neutrons are produced into the soil, they undergo elastic collisions with hydrogen nuclei in which neutron loses energy and gets scattered. Since water is the main source of hydrogen in soil, the density of slowed neutron is proportional to the volume fraction of water present in the soil.

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

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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

112 1003292

The van Bemmelen factor in soil science is

1. 1.472
2. 1.427
3. 1.724
4. 1.742

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

113 1003293

The assumptions made in Darcy's Law are:

- (A). Kinetic energy of water is negligible.
- (B). Mass density of water is constant.
- (C). Viscosity of water is constant.
- (D). Flow is laminar.

Choose the **correct** answer from the options given below:

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

114 1003294

Concept of root interception is propounded by:

- 1. Barraclough and Tinker (1981)
- 2. Jenny and Overstreet (1939)
- 3. Mengel and Kirkby (1982)
- 4. Lundegardh (1945)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

115 1003295

Read the following statements:

- (A). At a given time, potassium in the solution and exchangeable forms constitutes the fraction readily available to plants.
- (B). The exchangeable K tends to attain equilibrium slowly with solution K but, rapidly with non-exchangeable K.
- (C). The solution K concentration largely controls the K movement (diffusion) towards the plant roots and thereby, the K uptake by plants.
- (D). On depletion of exchangeable K, the non-exchangeable K replenishes it and the supply of K to plants is maintained.

Choose the **correct** answer from the options given below:

1. (A), (C) and (D) only.
2. (A), (B) and (D) only.
3. (A), (B), (C) and (D).
4. (B), (C) and (D) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

#### Objective Question

116 1003296

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

Assertion (A) : Potassium activity ratio (ARK) is used, in place of K concentration alone, to indicate the intensity factor which is a measure of K in soil solution that is immediately available for absorption by plant root.

Reason (R) : The absorption of K is influenced by the activity of other cations like  $\text{Ca}^{2+}$  and  $\text{Mg}^{2+}$  in the soil solution.

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

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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

#### Objective Question

117 1003297



Read carefully below mentioned statements:

- (A). Organisms with optimum temperature between 20-35 °C are termed as 'mesophiles'.
- (B). Psychrophiles have optimum temperature for growth below 10 °C.
- (C). Chemoautotrophs get energy from the oxidation of simple inorganic compounds.
- (D). Heterotrophs derive energy by oxidation of organic compounds.

Choose the **correct** answer from the options given below:

1. (A), (B) and (C) only.
2. (A), (B) and (D) only.
3. (A), (B), (C) and (D).
4. (B), (C) and (D) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

#### Objective Question

118 1003298

Match **List-I** with **List-II**

| List-I                                      | List-II                                                                                                                         |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| (Book/Theory proposed/Characteristic, etc.) | (Author/Thinker/Name of Theory, etc.)                                                                                           |
| (A). Beckett, P.H.T. (1964)                 | (I). "Step-K", and "Constant Rate-K" as a measure of plant utilizable non-exchangeable K reserves in soil.                      |
| (B). Haylocks, O.F. (1956)                  | (II). "Quantity-Intensity" relations of potassium.                                                                              |
| (C). Page, J.B. and Baver, L.D. (1940)      | (III). States that higher Ca concentration in the outer solution either enhances the uptake of K or reduces the loss of K ions. |
| (D). Viets, F.G. (1944)                     | (IV). Lattice Hole Theory                                                                                                       |

Choose the **correct** answer from the options given below:

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

A1 : 1



A2 : 2

A3 : 3

A4 : 4

## Objective Question

119 1003299

Match **List-I** with **List-II**

| <b>List-I</b>                | <b>List-II</b>                           |
|------------------------------|------------------------------------------|
| <b>(Types of Indicators)</b> | <b>(Name of Indicators)</b>              |
| (A). Precipitation           | (I). Fluorescein, Eosin                  |
| (B). Neutralization          | (II). Orthophenanthroline, Diphenylamine |
| (C). Adsorption              | (III). Thymolphthalein, Bromophenol blue |
| (D). Oxidation-reduction     | (IV). Potassium chromate, Ferric alum    |

Choose the **correct** answer from the options given below:

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

## Objective Question

120 1003300

- (A). Liming soils to >pH 6.8–7.0 can reduce phosphorus availability because of the precipitation of Ca or Mg phosphates.
- (B). With the exception of molybdenum, micronutrient availability decreases with increasing pH due to liming.
- (C). Structure of fine-textured soils may be improved by liming, as a result of enhanced flocculation of Ca-saturated clays.
- (D). Liming decreases the incidence of diseases such as scab in root crops.

Choose the **correct** answer from the options given below:

1. (A), (B) and (C) only.
2. (A), (B) and (D) only.
3. (A), (B), (C) and (D).
4. (B), (C) and (D) only.

|  |  |        |
|--|--|--------|
|  |  | A1 : 1 |
|  |  | A2 : 2 |
|  |  | A3 : 3 |
|  |  | A4 : 4 |