ICAR AIEEA PG

QUESTION PAPER

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PREVIEW QUESTION BANK

Module Name : WATER SCIENCE and TECHNOLOGY-ENG
Exam Date : 09-Jul-2023 Batch : 10:00-12:00

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Negative Marks
Objective Question				
1	2101	The percentage share of agriculture to total national export during 2020-21 was about : 1. 20% 2. 14% 3. 10% 4. 5% A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
2	2102	Which of the following agricultural commodity earn the highest foreign exchange through export during 2020-21 ? 1. Flower 2. Maize 3. Processed vegetables 4. Rice A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
3	2103		4.0	1.00

Which of the following statements are true about the Indian Agriculture ?

(A) India is not sufficient in edible vegetable oil production.

(B) Horticulture production was about 331 million tonnes during 2020-21

(C) PM-KISAN scheme provide Rs. 2,000 / year / farmer

(D) Per drop more crop scheme was launched in 2019-20

(E) Soil Health Card Scheme was launched in 2014-15

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question				
4	2104		4.0	1.00

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

List-I	**List-II**
(Concept)	**(Explaination)**
(A) Ley farming	(I) Extra crop between two main crops
(B) Relay cropping	(II) Cropping between two rows of trees/shrubs.
(C) Catch cropping	(III) Sowing of next crop before harvesting of previous crop.
(D) Alley cropping	(IV) Inclusion of fodder in cropping systems.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

5 | 2105 | 4.0 | 1.00

Arrange these growth stages of rice in sequence from sowing to harvesting : -

(A) Dough stage

(B) Flowering stage

(C) Tillering stage

(D) Booting stage

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

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

		A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
6	2106	Given below are two statements about groundnut : **Statement (I) :** Groundnut cultivation is done during kharif, winter, spring and summer seasons in different parts of India. **Statement (II) :** Goundnut is a non-legume crop and belongs to family compositae. 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	4.0	1.00
Objective Question				
7	2107		4.0	1.00

Which of the following statements are true about mango ?

(A) Mango belongs to family Anacardiaceae and have 2N=40.

(B) Mango is a self-pollinated fruit.

(C) Mango is rich source of Vitamin A.

(D) In monoembryonic mango propagation is done through seed.

(E) Alphonso is a cultivar of mango.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

8 2108 4.0 1.00

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

List-I (Crops)	**List-II** (Botanical name)
(A) Groundnut	(I) *Oryza sativa*
(B) Pigeonpea	(II) *Cicer arietinum*
(C) Rice	(III) *Arachis hypogaea*
(D) Chickpea	(IV) *Cajanus cajan*

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

9 | 2109 | 4.0 | 1.00

Which of the following is a dominant soil group in India ?

1. Red soils
2. Black cotton soils
3. Alluvial soils
4. Laterite soils

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

10 | 2110 | 4.0 | 1.00

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

List-I (Essential element)	**List-II** (Deficiency symptoms)
(A) Nitrogen	(I) Leaf scorching/tip burning
(B) Phosphorus	(II) Failure of terminal bud formation
(C) Potassium	(III) Pale yellow to brown necrosis
(D) Calcium	(IV) Brozing of leaf margin

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

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

11	2111	Which of the folloing statements are true about nitrogen nutrition in plant ? (A) Nitrogen deficiency symptoms first appears on old leaf. (B) Excess nitrogen causes early maturity of crop. (C) Nitrogen translocated from old leaves to new leaves in response to demand. (D) Nearly 10% of Indian soils are deficient in nitrogen. (E) Nitrogen is constituent of chlorophyll, amino acids and nucleic acids. Choose the ***correct*** answer from the options given below : 1. (A), (B) and (E) only. 2. (A), (B) and (D) only. 3. (A), (C) and (E) only. 4. (B), (C) and (D) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

12	2112	Which of the following is not true about potassium nutrition in plants ? 1. Potassium plays an important role in formation of starch and translocation of sugar. 2. Potassium activates number of enzmes in plant. 3. Potassium is involved in opening and closing of stomata in plant. 4. Potassium is the main constituents of protein and chlorophyll in plant. A1 : 1 A2 : 2	4.0	1.00

A3 : 3

A4 : 4

Objective Question

13 2113

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

List-I (Cell organelles)	**List-II** (Functions)
(A) Ribosomes	(I) Contains waste materials and water
(B) Golgi bodies	(II) Contains carotenoid pigment
(C) Chromoplasts	(III) Protein synthesis
(D) Vacuole	(IV) Formation of cell wall

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

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

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

14 2114

4.0 1.00

Given below are two statements about the nucleus of cell :

Statement (I) : Chromatin netwok mainly consists of ribose nucleic acid.

Statement (II) : Nucleoli in nucleus are rich in RNA.

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

15	2115	Among the different phases of meosis cell division, chromosomes pairing occurs in _____.	4.0	1.00

1. Pachytene
2. Zygotene
3. Anaphase II
4. Interphase II

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

16	2116		4.0	1.00

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

List-I	**List-II**
(Term)	**(Explaination)**
(A) Dihybrid	(I) Gene which supress the effect of other gene.
(B) Alleles	(II) Qualitative character gene linked with quantitative character gene
(C) Marker gene	(III) Alternative form of gene
(D) Epistatic gene	(IV) Law of independent assortment

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

17	2117		4.0	1.00

Which of the following statements are true about C3 type plants ?

(A) Have two CO_2 accepter

(B) First stable product is phosphoglyceric acid

(C) Optimum temperature for photosynthesis is low as compared to C4

(D) Photosynthesis occurs even when stomata are closed.

(E) Photorespiration rate is very high

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

18	2118	Given below are two statements, one is labelled as **Assertion (A)** and other one labelled as **Reason (R)**. **Assertion (A) :** Light normally increases the transpiration rate in plant. **Reason (R) :** Light normally causes opening of stomata and increase in temperature 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	4.0	1.00

A3 : 3

A4 : 4

Objective Question

19	2119	Which of the following is released during conversion of succinate to fumarate in TCA cycle ? 1. CO_2 2. ATP 3. H_2O 4. $FADH_2$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

20	2120	Which of the followings is true about the DNA ? (A) DNA contains five carbon sugar. (B) In DNA Thymine is present in place Uracil. (C) DNA is central to protein syntheses. (D) In DNA one of the nucleoside is Uridine. (E) DNA is usually a double stranded structure. Choose the ***correct*** answer from the options given below : 1. (A), (B) and (D) only. 2. (A), (C) and (D) only. 3. (A), (B) and (E) only. 4. (B), (C) and (D) only. A1 : 1 A2 : 2 A3 : 3	4.0	1.00

A4 : 4

Objective Question

21 | 2121 | 4.0 | 1.00

Given below are two statements :

Statement (I) : Karnal bunt is the fungal disease of wheat first reported from Karnal, Haryana.

Statement (II) : Karnal bunt can be controlled by adoption of resistant/tolerant varieties and seed treatment with vitavax.

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 | 2122 | 4.0 | 1.00

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

List-I (Crops)	**List-II** (Insect-pest/disease)
(A) Sugarcane	(I) American bollworm
(B) Chickpea	(II) Neck blast
(C) Cotton	(III) Red rot
(D) Rice	(IV) Pod borer

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

23 2123

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

List-I (Govt. Programme)	**List-II** (Purpose of programme)
(A) PM KISAN Scheme	(I) For efficient use of irrigation water
(B) NMEO	(II) For efficient use of fertilizers and soil health improvement
(C) PDMC	(III) For increasing vegetable oil production
(D) SHC	(IV) For providing financial help to farmers

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

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

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

24 2124

4.0 1.00

Arrange these ICAR Institutes in order of their location from South to North in India.

(A) Central Agro-forestry Research Institute

(B) National Bureau of Plant Genetics Resources

(C) Indian Institute of Maize research

(D) Central Tuber Crops Research Institute

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

25	2125	Which of the following ICAR-Institutes have their correct location ? (A) Indian Institute of Agricultural Biotechnology, Ranchi, Jharkhand (B) Central Institute of Fisheries Education, Cochin, Kerala (C) Central Institute for Research on Goats, Bikaner, Rajasthan (D) Central Soil Salinity Research Institute, Karnal, Haryana (E) Central Tobacco Research Institute, Rajamundhary, Andhra Pradesh Choose the ***correct*** answer from the options given below : 1. (A), (B) and (D) only. 2. (A), (D) and (E) only. 3. (B), (C) and (D) only. 4. (B), (C) and (E) only. A1 : 1	4.0	1.00

		A2 : 2 A3 : 3 A4 : 4		
Objective Question				
26	2126	The concept of "time of concentration" refers to _____. 1. The time, it takes for rainfall to reach ground surface 2. The time, it takes for clouds to form and rain start falling 3. The time, it takes for runoff to reach a specific point in the watershed 4. The time, it takes for evaporation to occur after rainfall A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
27	2127	Arrange Land capability classes from "Fit for cultivation" to "not suitable for cultivation" (A) Light green (B) Dark green (C) Yellow (D) Blue (E) Red Choose the ***correct*** answer from the options given below : 1. (A), (B), (C), (D), (E). 2. (A), (C), (E), (D), (B). 3. (B), (A), (D), (C), (E). 4. (B), (A), (C), (E), (D). A1 : 1 A2 : 2	4.0	1.00

		A3 : 3 A4 : 4		
Objective Question				
28	2128	Which of the following relations exists in terms of their better performance if rainfall data points are small in number (<25) in frequency analysis of rainfall ? 1. California>Weibull>Foster 2. California>Foster>Weibull 3. Foster>California>Weibull 4. Weibull>Foster>California A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
29	2129	Difference between observed total rainfall hyetograph and the excess rainfall hyetograph is termed as _____. 1. Base flow 2. Subtraction 3. Abstraction 4. Overland flow A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
30	2130		4.0	1.00

Determine the recurrence interval in years using Weibull formula if data is available for 16 years and 10 is the ranking of the particular event.

1. 1.5 years
2. 1.7 years
3. 0.59 years
4. 0.63 years

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

31	2131	Which of the following statements is/are ***correct*** ? (A) Anticyclones are regions of high pressure and cause clockwise wind circulation in northern hemisphere. (B) Anticyclons are regions of low pressure but cause clockwise wind circulation in northern hemisphere. (C) Cyclons are regions of low pressure with circular wind motion. 1. (A) and (B) only. 2. (A), (B) and (C) only. 3. (B) and (C) only. 4. (A) and (C) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

32	2132		4.0	1.00

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

List-I (Rainfall interpretation)	List-II (Represented By)
(A) Mass curve	(I) Rainfall intensity vs time
(B) Unit hydrograph	(II) Cumulative precipitation vs time
(C) Depth area duration curve	(III) Discharge rate vs Time
(D) Hyetograph	(IV) Average depth of rainfall vs area

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

33	2133	The average annual rainfall of India is _____. 1. 119.4 mm 2. 119.4 cm 3. 11.94 m 4. 219 cm A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

34	2134		4.0	1.00

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

Assertion (A) : AMC-I represents the low runoff potential.

Reason (R) : The watershed soils are dry enough for satisfactory cultivation.

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

1. Both **(A)** and **(R)** are true but **(R)** is NOT the correct explanation of **(A)**.
2. Both **(A)** and **(R)** are true and **(R)** is 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

35	2135	Normal ratio method is used _____. 1. To separate baseflow from hydrograph 2. To find mean precipitation over an area 3. To check consistency of raingauge station 4. To estimate missing rainfall data A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

36	2136		4.0	1.00

		Recession limb of hydrograph is controlled by _____. 1. Basin characteristics only 2. Storm characteristics only 3. Basin and storm characteristics 4. Initial and infiltration losses A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
37	2137	Given below are two statements : **Statement (I) :** Fan shaped catchment give high peak and narrow hydrograph. **Statement (II) :** Elongated catchment give broad and low peaked hydrograph. 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	4.0	1.00
Objective Question				
38	2138		4.0	1.00

Precipitation is measured using _____.

(A) Raingauge

(B) Pluviometer

(C) Ombrometer

(D) Hyetometer

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

39	2139	The diameter of circular collecting area of Symon's gauge is _____. 1. 30.5 cm 2. 12.7 cm 3. 5 cm 4. 7.7 cm A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

40	2140		4.0	1.00

		_____ is known as land of Thousand Lakes. 1. Andhra Pradesh 2. Telangana 3. Karnataka 4. Tamilnadu A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
41	2141	Which of the following methods does not directly account for orographic influences on rainfall ? 1. Arithmatic mean method 2. Reciprocal distance squared method 3. Thiessen method 4. Isohyetal method A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
42	2142	National Watershed Development Programme for Rainfed Agriculture was started in _____. 1. 1977-78 2. 1945-46 3. 1970-71 4. 1986-87 A1 : 1 A2 : 2 A3 : 3	4.0	1.00

A4 : 4

Objective Question

43 | 2143 | 4.0 | 1.00

The year in which the common guideline for watershed development projects by Government of India formulated was :

1. 2002
2. 2006
3. 2008
4. 2010

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

44 | 2144 | 4.0 | 1.00

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

List-I (Watershed model)	**List-II** (State)
(A) Nada	(I) Odisha
(B) Fakot	(II) Karnataka
(C) GR Hali	(III) Uttarakhand
(D) Kokriguda	(IV) Maharashtra
(E) Kumbhare	(V) Haryana

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

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

A1 : 1

A2 : 2

		A3 : 3 A4 : 4		
Objective Question				
45	2145	Arrange the followings in terms of their lower to higher value of run off coefficients for silt type of soil at 10 – 30% slope. (A) Cultivated land (B) Pasture land (C) Forest land Choose the ***correct*** answer from the options given below : 1. (A), (B), (C) 2. (A), (C), (B). 3. (C), (B), (A). 4. (B), (C), (A). A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
46	2146		4.0	1.00

Criteria for selection of site for construction of embankment type of water harvesting structures are:

(A) The site should be 0.5 km away from settlement area.

(B) The permeability of the soils in storage area should be minimum in percolation tank.

(C) The command area should be as close as possible to the dam/pond site.

(D) The downstream area should permit natural passage for safe disposal of surplus water.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question				
47	2147		4.0	1.00

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

List-I (Traditional water harvesting structure)	**List-II** (State/Region)
(A) Khadin	(I) Bihar
(B) Bandhara	(II) Bundelkhand
(C) Ahar	(III) Rajasthan
(D) Bandhis	(IV) Maharashtra
(E) Haweli	(V) Uttarpradesh

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

48 2148

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

Assertion (A) : High concentration of sodium in irrigation water is not desirable.

Reason (R) : It causes deflocculation of soil aggregates and seals the pores.

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 and **(R)** is the not correct explanation of **(A)**.
3. **(A)** is true but **(R)** is false.
4. **(A)** is false but **(R)** is true.

4.0 1.00

		A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
49	2149	If irrigation water contains carbonate, bicarbonates, calcium and magnesium ions as 4.0, 2.0, 2.5 and 1.5 mel^{-1}, respectively, then the residual sodium carbonate content of irrigation water is : 1. 0.5 me/l 2. 1.0 me/l 3. 1.5 me/l 4. 2.0 me/l A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
50	2150	The concentration of salt in the irrigation water having EC of 20 dS/m is : 1. 12.8 g/l 2. 13.8 g/l 3. 14.8 g/l 4. 15.8 g/l A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
51	2151		4.0	1.00

		Which of the following is not a physical property of soil ? 1. Soil texture 2. Soil consistency 3. Soil water 4. Soil density A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
52	2152	Which of the following equation expresses the velocity of settling particles as described by Stokes law ? 1. $v = 2gr^2(Dp - Dl)/9\eta$ 2. $v = 2gr(Dp - Dl)/9\eta$ 3. $v = 2gr^2(Dl - Dp)/9\eta$ 4. $v = gr(Dl - Dp)/4.5\eta$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
53	2153	Soil primary particles sand, silt and clay are arranged to form which of the following : 1. Pedon 2. Ped 3. Clod 4. Micromorphology A1 : 1 A2 : 2 A3 : 3	4.0	1.00

A4 : 4

Objective Question

54	2154	Which one of the followings is not true about soil consistency ? 1. It is the resistance of soil to deformation or rupture 2. It depends upon the cohesive and adhesive properties of soil 3. It deals with the strength and nature of forces between sand, silt and clay particles 4. It does not indicate the workability of soil A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

55	2155	If the soil in a core of diameter 4 cm, height 7 cm, weighs 170 g after drying and the weight of core without soil is 50 g, then the bulk density of the soil is : 1. 0.60 Mg m^{-3} 2. 1.15 Mg m^{-3} 3. 1.36 Mg m^{-3} 4. 1.85 Mg m^{-3} A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

56	2156	A swimmer is at 2 meter above in a 8 m deep rectangular pond which filled 3/4th of it. What will the pressure on a swimmer at 2 m above the bottom : 1. 100 g/cm^2 2. 200 g/cm^2 3. 400 g/cm^2 4. 600 g/cm^2	4.0	1.00

		A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
57	2157	Matric Potential of which of the following is low : 1. Dry soil 2. Partially moist soil 3. Moist soil 4. Wet soil A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
58	2158	In a hydraulic conductivity study a 15 cm thick soil layer of water saturated soil was allowed a 15 cm water layer above it vertically and the water was allowed to pass through soil for 45 minutes and a total of 540 cc of water was collected. The cross sectional area of the soil layer was 30 cm^2. Calculate the discharge rate of flow of water through the soil. 1. 6.0 cm/h 2. 12.0 cm/h 3. 18.0 cm/h 4. 24 cm/h A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
59	2159		4.0	1.00

Match the following

List-I	List-II
(A) Gravemetric moisture content	(I) Vw/Vs
(B) Volumetric moisture content	(II) Vw/Vt
(C) Liquid ratio	(III) Vw/vf X100
(D) Saturation percent	(IV) Mw/Ms

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

60	2160	Who among the followings is known as father of soil physics ? 1. V. Dokuchaiev 2. D. Hillel 3. LA. Richards 4. Thomas Way A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

61	2161		4.0	1.00

		The range of Cation exchange capacity of kaolinite clay mineral is : 1. 3-15 cmol (p^+)/kg 2. 20-45 cmol (p^+)/kg 3. 80-120 cmol (p^+)/kg 4. 120-150 cmol (p^+)/kg A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
62	2162	The yield of many crops is restricted at what range of electrical conductivity of the saturation extract of a soil : 1. 2-4 dS/m 2. 4-8 dS/m 3. 8-16 dS/m 4. > 16 dS/m A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
63	2163	At what value of sodium adsorption ratio, a soil is considered as Alkali soil : 1. 11 meq l^{-1} 2. 12 meq l^{-1} 3. 13 meq l^{-1} 4. 14 meq l^{-1} A1 : 1 A2 : 2 A3 : 3	4.0	1.00

		A4 : 4		
Objective Question				
64	2164	In saline soils boron concentration is very important from plant growth point of view. What is the safe limit of water soluble boron concentration in a saline soil. 1. <0.7 mg/kg 2. 0.7-1.5 mg/kg 3. 1.5 - 2.0 mg/kg 4. >2.0 mg/kg A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
65	2165	The gypsum equivalent of sulphuric acid for 2000 kg of gypsum is : 1. 360 kg 2. 1140 kg 3. 1500 kg 4. 3240 kg A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
66	2166		4.0	1.00

Given below are two statements :

Statement (I) : Soil having high amount of hydrogen ions affect the nutrient availability.

Statement (II) : Increased soil pH beyond 7.0 increases the availability of micronutrients.

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

67	2167	Blossom end rot disease in tomato is caused due to deficiency of which of the following nutrient. 1. Mn 2. Fe 3. Ca 4. P A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

68	2168		4.0	1.00

Among the following statement(s) what is true about colloids.

(A) They do not settle down when left undisturbed

(B) They are not visible to the naked eyes

(C) Their size generally range between 10^{-5} and 10^{-7} cm

(D) A colloidal solution is homogenous in nature

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

69	2169	Which of the following match(s) is ***correct*** ? (A) Laterite soil - pH 7-8 (B) Black soil - has high amount of clay (C) Alkali soil - pH 9 (D) Red soil - calcareous 1. (A) only. 2. (A) and (B) 3. (A), (B) and (C) 4. (B) and (C) only A1 : 1 A2 : 2 A3 : 3	4.0	1.00

A4 : 4

Objective Question

70 | 2170 | 4.0 | 1.00

What are the type of phosphate ions available for plant uptake in alkali soil ?

1. $H_2PO_4^{2-}$
2. HPO_4^{-}
3. PO_4^{3-}
4. H_3PO_4

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

71 | 2171 | 4.0 | 1.00

Which of the following statements are correct pertaining to evaporation processes ?

(A) The gross escape of water molecules from the liquid state to the gaseous state constitutes evaporation.

(B) The latent heat of vaporization at about 685 cal/g of evaporated water must be provided by the water body.

(C) The rate of evaporation increases always with the wind speed.

(D) Deep water bodies have more heat storage than shallow ones.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

72 | 2172 | 4.0 | 1.00

Which of the following statements are correct with respect to Radiation method for estimation of reference crop evapotranspiration.

(A) Radiation method is essentially an adaptation of Hawksley formula.

(B) Radiation method is suggested for areas where available climate data include measured wind and humidity.

(C) In equatorial zone the radiation method may be more reliable than Blanney-Criddle approach.

(D) The amount of radiation received at the top of the atmosphere (Ra) is dependent on latitutde and the time of year only.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

73	2173		4.0	1.00

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

List-I (Crop)	**List-II** (Seasonal crop evapotranspiration (mm))
(A) Beans	(I) 400-750
(B) Cotton	(II) 450-825
(C) Maize	(III) 300-650
(D) Sorghum	(IV) 250-500
(E) Soybeans	(V) 550-950

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

74 | 2174 | 4.0 | 1.00

For upland rice, the crop coefficient generally given for initial stages of rice crop need to be reduced by :

1. 5-10%
2. 10-15%
3. 15-20%
4. 20-25%

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

75	2175	A farmer has 4000 m^2 area. How much water is required for irrigation to be applied at 5 cm depth ? 1. 2000 litre 2. 80,000 litre 3. 0.02 ha-m 4. 20 m^3 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
76	2176	Soil loss tolerance values at top soil depth vary between : 1. 2-11 t/ha 2. 11-19 Mg/ha 3. 19-26 t/ha 4. 26-35 Mg/ha A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
77	2177		4.0	1.00

Followings are the statements with respect to erosion control structures :

(A) One of the primary causes of failure of permanent control structure is insufficient hydraulic capacity.

(B) Model studies of open channel structures are based on Reynold number.

(C) A given quantity of water in an open conduit may flow at two depths having same energy head.

(D) The capacity of chute spillway is decreased by sedimentation at the outlet.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

78 2178 4.0 1.00

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

List-I (Soil erosion/structures)	**List-II** (Scientist/Researcher)
(A) Raindrop	(I) Blaisdell and Huff
(B) Drop spillway	(II) Mavis
(C) Wind erosion	(III) Hall
(D) Chute spillway	(IV) Skidmore and Woodruff
(E) Stream channel erosion	(V) Blaisdell and Donnelly

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

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

		A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
79	2179	The most efficient equipment for construction of contour bund is : 1. V-ditcher 2. A-frame ridger 3. Mouldboard plough 4. Buck-scraper A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
80	2180	Class III type land is : 1. Good for cultivation 2. Moderately good for cultivation 3. Suitable for cultivation with major conservation farming practices 4. Unsuitable for cultivation A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
81	2181		4.0	1.00

Find the order of the differential equation $\left(\frac{d^2y}{dx^2}\right)^2 + \left(\frac{dy}{dx}\right)^3 + y^4 = 0$

1. 1
2. 2
3. 3
4. 4

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

82 2182

An incomplete frequency distribution is given as below :

Variable	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	12	30	?	65	?	25

Given that the total frequency is 229 and median 15.46, find missing frequency :

4.0 1.00

1. 34, 45
2. 33, 34
3. 32, 33
4. 31, 32

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

83 2183

4.0 1.00

Let quadratic equation be $ax^2 + bx + c$ then the sum of roots will be :

1. $\frac{b}{a}$
2. $\frac{-b}{a}$
3. $\frac{a}{b}$
4. $\frac{-a}{b}$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

84	2184	The general solution of the differential equation $\frac{dy}{dx} = \frac{x^2}{y^2}$ is :	4.0	1.00

1. $x^2 + y^2 = c$
2. $x^2 - y^2 = c$
3. $x^3 + y^3 = c$
4. $x^3 - y^3 = c$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

85	2185		4.0	1.00

		A man and his wife appear in an interview for two vacancies in the same post. The probability of husband's selection is (1/7) and the probability of wife's selection is (1/5). What is the probability that only one of them is selected ? 1. 2/7 2. 1/7 3. 3/4 4. 4/5 A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
86	2186	Given below are two statements, one is labelled as **Assertion (A)** and other one labelled as **Reason (R)**. **Assertion (A) :** The probability of a sure event is 1. **Reason (R) :** Let E be an event. Then $0 \leq P(E) \leq 1$. 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	4.0	1.00
Objective Question				
87	2187		4.0	1.00

Given below are two statements :

Statement (I) : A direct subsidy is a kind of subsidy which is provided to the farmers by the government in the form of cash for example farm waiver schemes, PM Kisan scheme etc.

Statement (II) : An indirect subsidy is a kind of subsidy that is being provided via discount on other agricultural purchase like seeds and fertilizers

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 **Statements (II)** is correct.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

88	2188		4.0	1.00

Following are the statements pertaining to power in pumps :

(A) The efficiency of any given pump (η) is a ratio defined as the water horsepower out divided by the mechanical horsepower into the pump

(B) No pump can convert all of its mechanical power into water power.

(C) Mechanical power is lost in the pumping process due to friction and other physical losses

(D) It is because of these losses that the horsepower going into the pump must be greater than the water horsepower leaving the pump.

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

A1 : 1

A2 : 2

A3 : 3

		A4 : 4		
Objective Question				
89	2189	Rain drops are spherical in shape because of 1. surface tension 2. capillary 3. downward motion 4. acceleration due to gravity A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
90	2190	If $2x^3+3x^2+5x+6=0$ has roots α, β, γ then, find $\alpha+\beta+\gamma$ 1. 3/2 2. -3/2 3. 5/2 4. -5/2 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
91	2191		4.0	1.00

Which of the followings statements are true about the cut-threat and Parshall flumes.

(A) The cut-throat flume is similar to the Parshall flume, but has no throat section, only converging and diverging sections

(B) It gives nearly as accurate measurements as Parshall flume in free flow condition for smaller throat widths

(C) Angles of convergence and divergence of cut-throat flume changes with size of the flume.

(D) Because it is easier to construct and install, the cut-throat flume is often preferred to the Parshall flume

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

92	2192	The current flowing through the armature of a d.c. shunt machine at maximum efficiency is given by : 1. $\sqrt{(P_i / R_a)}$ 2. $\sqrt{(R_a / P_i)}$ 3. $\sqrt{(P_i / R^2_a)}$ 4. $\sqrt{(R_a / P^2_i)}$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

93	2193		4.0	1.00

Given below are two statements :

Statement (I) : Differentiation and Integration are just opposite of each other.

Statement (II) : Differentiation is the slope of any curve at any point, while integration is the area under that same curve specified between two points.

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

94	2194	4.0	1.00	

Which of the followings statements related to pressure are correct ?

(A) Gage pressure = Absolute pressure − Atmospheric pressure

(B) Absolute pressure = Gage pressure − Atmospheric pressure

(C) Absolute pressure = Atmospheric pressure + Vacuum pressure

(D) Gage pressure = Atmospheric pressure + Vacuum pressure

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

95 | 2195 | 4.0 | 1.00

In actual machines _____.

1. mechanical advantage is greater than velocity ratio
2. mechanical advantage is equal to velocity ratio
3. mechanical advantage is less than velocity ratio
4. mechanical advantage is unity

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

96 | 2196 | 4.0 | 1.00

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

List-I (Formula)	**List-II** (Purpose)
(A) Kennedy	(I) Open channel flow
(B) Chezy	(II) Friction factor
(C) Darcy-Weisbach	(III) Design of open channels
(D) Manning's	(IV) Estimates on seepage loss in canal systems

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

97	2197	One dimentional flow is : 1. Steady uniform flow 2. Uniform flow 3. Flow which neglects changes in a transverse direction 4. Restricted to flow in a straight line A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
98	2198	Given below are two statements : **Statement (I) :** The commercial unit of energy is 1 kWh. **Statement (II) :** $1kWh = 2.6 \times 10^6 J$ 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	4.0	1.00
Objective Question				
99	2199		4.0	1.00

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

Assertion (A) : A good measure of dispersion needs to be least affected by change in the sampling.

Reason (R) : Standard deviation is the best measure of dispersion.

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

100	2200	The average variable cost is the result of _____. 1. Total variable cost and fixed cost. 2. Output and marginal cost. 3. Marginal cost and total variable cost. 4. Total variable cost and output. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

101	2201		4.0	1.00

		Distance of throw of water through a sprinkler nozzle is not a function of : 1. The operating pressure 2. Size and shape of the nozzle 3. Distance between laterals 4. Angle of nozzle opening A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
102	2202	Followings are the statements related to water saving in drip irrigation. Identify the statement that is NOT correct. 1. Only a part of the field is wetted during irrigation 2. Deep percolation losses are minimized 3. Surface runoff is minimized 4. Crop water requirement is reduced A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
103	2203		4.0	1.00

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

Assertion (A) : Surface irrigation methods are the oldest, most commonly used methods and may continue to dominate irrigation scene in India.

Reason (R) : Farmers are quite familiar with surface irrigation being traditional in nature, easy to practice even with limited resources.

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 incorrect and **(R)** is the 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

104	2204	Arrange the followings irrigation methods in ascending order (low to high) of their irrigation use efficiencies. (A) Border irrigation (B) Sprinkler irrigation (C) Drip irrigation (D) Flood irrigation Choose the ***correct*** answer from the options given below : 1. (A), (B), (C), (D). 2. (D), (A), (B), (C). 3. (B), (A), (D), (C). 4. (C), (B), (D), (A). A1 : 1 A2 : 2	4.0	1.00

		A3 : 3 A4 : 4		
Objective Question				
105	2205	A tube well is used to irrigate the field. It pumps 9000 m^3 of water out of which 8100 m^3 reaches the field head. Calculate the farm irrigation system efficiency, if the irrigation water application efficiency is 60%. 1. 90% 2. 65.5% 3. 54% 4. 75% A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
106	2206	Four distinct growth stages are used to estimate crop evapotranspiration for which crop coefficients vary from one stage to another. In general the highest crop coefficient is at the stage : 1. Initial or early stage 2. Crop development stage 3. Mid-season stage 4. Late season or harvest stage A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
107	2207		4.0	1.00

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

Assertion (A) : A tensiometer vacuum gauge has divisions in the range of 0 to 100 centibars although in practice the range of operation of a tensiometer is 0 to 85 centibars.

Reason (R) : At the upper limit of 85 centibars, the column of water in the tube will form water vapour bubbles and the instrument will cease to function.

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

1. Both **(A)** and **(R)** are not correct and **(R)** is not the correct explanation of **(A)**.
2. Both **(A)** and **(R)** are correct and **(R)** is 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

108 2208

Given below are four soil moisture constants

(A) Field capacity moisture content

(B) Saturation moisture content

(C) Hygroscopic moisture content

(D) Permanent wilting point

Choose the ***correct*** combination from the options given below that is used to calculate the total plant available water :

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

A1 : 1

4.0 1.00

		A2 : 2 A3 : 3 A4 : 4		
Objective Question				
109	2209	In water pumping terminology, acronym NPSHA stands for : 1. Net positive suction head available 2. Net pressure system head available 3. Net positive suction head allowed 4. Net pumping system head available A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
110	2210	Which of the following statement related to pump Head versus Discharge characteristic curve is NOT true ? 1. The head produced by a pump in general steadily decreases with increasing pump discharge 2. The head generated by the pump when discharge is zero (pump is operating against a closed valve) is called shut-off head 3. Shut-off head is used to design piping on the discharge side of the pump, so that it is able to withstand the shut-off head when the discharge valve is closed 4. Pump efficiency is maximum at the shut-off head A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
111	2211		4.0	1.00

Given below are two statements :

Statement (I) : When two pumps are installed in series, discharge remaining the same, water is lifted to greater height compared to a single pump.

Statement (II) : When two pumps are installed in parallel then not only the discharge increases but water is also lifted to greater height compared to a single pump.

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 not true.
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

112	2212	A centrifugal pump runs at 1500 revolution per minute (RPM) and delivers water against a head of 10 m. What would be the head developed if the pump is operated at 1650 RPM ? 1. 11.0 m 2. 12.1 m 3. 13.31 m 4. 10 m A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

113	2213		4.0	1.00

		Which method of drilling wells uses water and bentonite mixture (mud) as drilling fluid ? 1. Rotary percussion drilling 2. Air rotary drilling 3. Rotary drilling 4. Reverse-circulation rotary drilling A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
114	2214	A total station in drainage investigations is used to 1. Measure water table depth 2. Measure artesian pressure 3. Conduct water quality surveys 4. Conduct topographic surveys A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
115	2215	In which layout subsurface drains enter the main drain at an angle ? 1. Parallel system 2. Double main system 3. Random system 4. Herringbone system A1 : 1 A2 : 2 A3 : 3	4.0	1.00

		A4 : 4		
Objective Question				
116	2216	Hooghoudt's equation is used to design lateral drain spacing for two layered profiles, if 1. Drains are located in the upper layer only 2. Drains are located at the interface of the two layers only 3. Drains are located in the lower layer only 4. Drains are located either in the upper or lower layers only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
117	2217	Surface drainage coefficient of a watershed is 1.44 mm/day. What should be the capacity of the surface drain at the outlet of the watershed, if its area is 500 ha ? 1. 3 m^3/min 2. 10 m^3/min 3. 5 m^3/min 4. 50 m^3/min A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
118	2218		4.0	1.00

Given below are two statements :

Statement (I) : Irrigation tubewells should be so located that there is no interference in the cone of depressions of the two adjoining tubewells.

Statement (II) : Drainage tubewells to lower water table should be so located that there is some interference in the cone of depressions of two adjoining tubewells.

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

119	2219		4.0	1.00

Given below are two statements :

Statement (I) : Pricing of water on volumetric basis helps to incentivize water conservation, improve water use efficiencies and restrict overuse of water.

Statement (II) : Pricing water on volumteric water supply basis requires huge investments in irrigation water supply infrastructure including water measurement structures, development of operational plans and revenue collection procedures.

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

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

A1 : 1

A2 : 2

A3 : 3

		A4 : 4		
Objective Question				
120	2220	Identify the correct option for which Haryana/Punjab, Preservation of Sub-soil Water Acts 2009 have been enacted : 1. Fix the dates for sowing of rice nursery and rice transplanting in the states 2. List guidelines for implementing the Atal Bhujal Yojana 3. Provide incentives for crop diversification from paddy to other low water requiring crops 4. Provide incentives for artificial groundwater recharge A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

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