

# National Testing Agency

<b>Question Paper Name :</b>	Water Science and Technology 17th September Shift 2
<b>Subject Name :</b>	WATER SCIENCE AND TECHNOLOGY
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<b>Display Marks:</b>	Yes

## Water Science and Technology

<b>Group Number :</b>	1
<b>Group Id :</b>	190889141
<b>Group Maximum Duration :</b>	0
<b>Group Minimum Duration :</b>	120
<b>Show Attended Group? :</b>	No
<b>Edit Attended Group? :</b>	No
<b>Break time :</b>	0
<b>Group Marks :</b>	480
<b>Is this Group for Examiner? :</b>	No

## Part A: General Knowledge

<b>Section Id :</b>	190889347
<b>Section Number :</b>	1
<b>Section type :</b>	Online
<b>Mandatory or Optional :</b>	Mandatory

<b>Number of Questions :</b>	20
<b>Number of Questions to be attempted :</b>	20
<b>Section Marks :</b>	80
<b>Enable Mark as Answered Mark for Review and Clear Response :</b>	Yes
<b>Sub-Section Number :</b>	1
<b>Sub-Section Id :</b>	190889387
<b>Question Shuffling Allowed :</b>	Yes

**Question Number : 1 Question Id : 19088916222 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1**

Which of the following is the device used to measure the power and speed of the wind?

1. Avometer
2. Anemometer
3. Airometer
4. Aviontimeter

**Options :**

- 19088964781. 1
- 19088964782. 2
- 19088964783. 3
- 19088964784. 4

**Question Number : 2 Question Id : 19088916223 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1**

Optical fibre used the concept of which of the following?

1. Reflection
2. Refraction
3. Total internal reflection
4. Total internal refraction

**Options :**

19088964785. 1

19088964786. 2

19088964787. 3

19088964788. 4

**Question Number : 3 Question Id : 19088916224 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Yellow vein mosaic is the viral disease of which of the following plants?

1. Ladyfinger
2. Papaya
3. Sugarcane
4. Banana

**Options :**

19088964789. 1

19088964790. 2

19088964791. 3

19088964792. 4

**Question Number : 4 Question Id : 19088916225 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following organ(s) is affected by Mumps disease?

1. Entire body
2. Skin
3. Eye
4. Parotid

**Options :**

19088964793. 1

19088964794. 2

19088964795. 3

19088964796. 4

**Question Number : 5 Question Id : 19088916226 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is the chemical name of vitamin B<sub>2</sub>?

1. Riboflavin
2. Calciferol
3. Pyridoxin
4. Niacin

**Options :**

19088964797. 1

19088964798. 2

19088964799. 3

19088964800. 4

**Question Number : 6 Question Id : 19088916227 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is not the input unit of the computer?

1. Mouse
2. Keyboard
3. Screen
4. Scanner

**Options :**

19088964801. 1

19088964802. 2

19088964803. 3

19088964804. 4

**Question Number : 7 Question Id : 19088916228 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The digital computer operates on which of the following principle?

1. Measurement
2. Calculation
3. Logical
4. Electrification

**Options :**

19088964805. 1

19088964806. 2

19088964807. 3

19088964808. 4

**Question Number : 8 Question Id : 19088916229 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The non-cooperation movement of Gandhiji was launched in which of the following year?

1. 1915
2. 1922
3. 1920
4. 1930

**Options :**

19088964809. 1

19088964810. 2

19088964811. 3

19088964812. 4

**Question Number : 9 Question Id : 19088916230 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

An Islamic revivalist movement named Wahabi movement was founded by which of the following person?

1. Sian Saheb
2. Syed Ahmed
3. Haji Shariat-Allah
4. DaduMian

**Options :**

19088964813. 1

19088964814. 2

19088964815. 3

19088964816. 4

**Question Number : 10 Question Id : 19088916231 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is considered as the “Magna Carta of England Education in India”?

1. Hunter education commission
2. Lord Macaulay’s Minute
3. Wood’s Despatch
4. Thomas Babington Macaulay

**Options :**

19088964817. 1

19088964818. 2

19088964819. 3

19088964820. 4

**Question Number : 11 Question Id : 19088916232 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following nutrient does not come under the ambit of 'macro-nutrients in Soil Health Card?

1. Nitrogen
2. Zinc
3. Phosphorous
4. Potassium

**Options :**

19088964821. 1

19088964822. 2

19088964823. 3

19088964824. 4

**Question Number : 12 Question Id : 19088916233 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Cole crops, root crops and legumes come under the ambit of which of the following?

1. Olericulture
2. Pomology
3. Viticulture
4. Arboriculture

**Options :**

19088964825. 1

19088964826. 2

19088964827. 3

19088964828. 4

**Question Number : 13 Question Id : 19088916234 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The study of individual trees, shrubs, vines, and perennial woody plants is known as which of the following?

1. Turf management
2. Arboriculture
3. Pomology
4. Viticulture

**Options :**

19088964829. 1

19088964830. 2

19088964831. 3

19088964832. 4

**Question Number : 14 Question Id : 19088916235 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The ministry is implementing MIDH (Mission for Integrated Development of Horticulture) with effect from which of the following year?

1. 2012-13
2. 2019-20
3. 2015-16
4. 2014-15

**Options :**

19088964833. 1

19088964834. 2

19088964835. 3

19088964836. 4

**Question Number : 15 Question Id : 19088916236 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



The interaction of soils with living things, particularly plants are well known as which of the following?

1. Edaphology
2. Pedology
3. Soil zoology
4. Pedogenesis

**Options :**

19088964837. 1

19088964838. 2

19088964839. 3

19088964840. 4

**Question Number : 16 Question Id : 19088916237 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following systems has also incorporated social aspects in itself?

1. Landscaping
2. Permaculture
3. Horticulture
4. Forest gardening

**Options :**

19088964841. 1

19088964842. 2

19088964843. 3

19088964844. 4

**Question Number : 17 Question Id : 19088916238 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What do you term the phenomenon whereby the specific gene is added to the plant for producing a desirable phenotype?

1. Genetic manipulation
2. Genetic recombination
3. Genetic modification
4. Genetic hybridisation

**Options :**

19088964845. 1

19088964846. 2

19088964847. 3

19088964848. 4

**Question Number : 18 Question Id : 19088916239 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What is the focus of the participatory plant breeding program?

1. Scientists
2. Plants
3. Environment
4. Farmers

**Options :**

19088964849. 1

19088964850. 2

19088964851. 3

19088964852. 4

**Question Number : 19 Question Id : 19088916240 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

How do you term the form of agriculture, in which, industrialized production of crops and animal products takes place?

1. Manufactured agriculture
2. Modern agriculture
3. Industrial agriculture
4. Mechanistic agriculture

**Options :**

19088964853. 1

19088964854. 2

19088964855. 3

19088964856. 4

**Question Number : 20 Question Id : 19088916241 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Micro-irrigation fund of Rs. 5.000 crore has been placed with which of the following organization?

1. NABARD
2. IDBI
3. SBI
4. RRBs

**Options :**

19088964857. 1

19088964858. 2

19088964859. 3

19088964860. 4

## **Part B Core : Natural Resource Management-II**

**Section Id :** 190889348

**Section Number :** 2

**Section type :** Online

<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	50
<b>Number of Questions to be attempted :</b>	50
<b>Section Marks :</b>	200
<b>Enable Mark as Answered Mark for Review and Clear Response :</b>	Yes
<b>Sub-Section Number :</b>	1
<b>Sub-Section Id :</b>	190889388
<b>Question Shuffling Allowed :</b>	Yes

**Question Number : 21 Question Id : 19088916242 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

According to agro-climatic zones regrouped by CAZRI, the potential cropping system in the cold arid zone of Jammu and Kashmir

1. No-cropping
2. Single cropping
3. Intercropping
4. Double cropping

**Options :**

19088964861. 1

19088964862. 2

19088964863. 3

19088964864. 4

**Question Number : 22 Question Id : 19088916243 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Match List I with List II

List I	List II
(Weeds )	(Major medicinal value)
A. <i>Achyranthes aspera</i>	I. Measles, enlargement of liver and spleen
B. <i>Acmella oleracea</i>	II. Stammering, tooth ache, stomatitis
C. <i>Leucas aspera</i>	III. Antidote for poisoning due to seeds of <i>Datura</i> spp., arsenic and mercury
D. <i>Solanum nigrum</i>	IV. Nasal congestion, sinusitis, snake bite, scorpion bite, chronic rheumatism
E. <i>Oxalis corniculata</i>	V. Asthma, cough, diuretic, piles, boils

Choose the correct answer from the options given below:

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

**Options :**

19088964865. 1

19088964866. 2

19088964867. 3

19088964868. 4

**Question Number : 23 Question Id : 19088916244 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Correct order of nitrogen fertilizers with respect to their acidifying effect on soil

1. Ammonium sulphate > Ammonium chloride > Ammonium nitrate > urea
2. Ammonium chloride > Ammonium sulphate > Urea > Ammonium nitrate
3. Ammonium sulphate > Ammonium chloride > urea > Ammonium nitrate
4. Ammonium nitrate < Ammonium chloride > Ammonium sulphate > urea

**Options :**

19088964869. 1

19088964870. 2

19088964871. 3

19088964872. 4

**Question Number : 24 Question Id : 19088916245 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Match List I with List II

List I	List II
(Water harvesting structure)	(Major purpose)
A. Farm pond	I. Gully reclamation, irrigation and ground water recharge
B. Percolation tank	II. Irrigation and fishery
C. Nala bund	III. Ground water recharge and surface moistening of down side sloping plot
D. Low earthen dam	IV. All sorts of community purposes and groundwater recharge
E. Khadin	V. Moisture and nutrient conservation, moisture recharge in the profile for raising <i>rabi</i> crops

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

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

**Options :**

19088964873. 1

19088964874. 2

19088964875. 3

19088964876. 4

**Question Number : 25 Question Id : 19088916246 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The energy rich drinks like 'bournvita', 'boost', 'horlicks', 'maltova', etc. are prepared from the extract of which crop?

1. Barley
2. Lentil
3. Pearlmillet
4. Sorghum

**Options :**

19088964877. 1

19088964878. 2

19088964879. 3

19088964880. 4

**Question Number : 26 Question Id : 19088916247 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Soils with less than \_\_\_\_\_ ppm available S are considered deficient for groundnut.

1. 10.0
2. 12.5
3. 15.0
4. 17.5

**Options :**

19088964881. 1

19088964882. 2

19088964883. 3

19088964884. 4

**Question Number : 27 Question Id : 19088916248 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which index provides actual yield advantage of intercropping?

1. Relative crowding coefficient
2. Aggressivity
3. Competition ratio
4. Land equivalent ratio

**Options :**

19088964885. 1

19088964886. 2

19088964887. 3

19088964888. 4

**Question Number : 28 Question Id : 19088916249 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What is the magnitude of water potential (bars) in the leaf?

1. -0.1 to -20
2. -5 to -50
3. -100 to -200
4. -1000 to -2000

**Options :**

19088964889. 1

19088964890. 2

19088964891. 3

19088964892. 4

**Question Number : 29 Question Id : 19088916250 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



Which country has highest area under organic cultivation?

1. Australia
2. Argentina
3. China
4. USA

**Options :**

19088964893. 1

19088964894. 2

19088964895. 3

19088964896. 4

**Question Number : 30 Question Id : 19088916251 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which among the following activities improves soil structure?

1. Summer deep ploughing
2. Frequent harrowings
3. Tillage at improper moisture
4. Tillage activity has no effect on soil structure

**Options :**

19088964897. 1

19088964898. 2

19088964899. 3

19088964900. 4

**Question Number : 31 Question Id : 19088916252 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which among the following is not the method to control *Striga* in sorghum?

1. The use of anti-transpirant on *Striga*
2. Application of more nitrogen to fertile land of sorghum
3. Crop rotation of sorghum with cotton
4. Application of herbicide that does not interfere with mannitol metabolism

**Options :**

19088964901. 1

19088964902. 2

19088964903. 3

19088964904. 4

**Question Number : 32 Question Id : 19088916253 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Combination of which of the following chemicals when sprayed at first node and flag leaf stages has been reported to reduce plant height, enhance lodging resistance and increase the grain yield of irrigated wheat?

- A. Tebuconazole
- B. Cycocel
- C. Phenyl mercuric acetate
- D. Chloromequat chloride

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

1. A and B only
2. B and C only
3. C and D only
4. D and A only

**Options :**

19088964905. 1

19088964906. 2

19088964907. 3

19088964908. 4

**Question Number : 33 Question Id : 19088916254 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Calculate the amount of farmyard manure (FYM) to be applied for 1.2 ha area of wheat crop to provide 150 kg N/ha to the soil When N content of FYM is 0.6% and the moisture content of FYM on dry weight basis is 50%.

1. 37.5 t
2. 45.0 t
3. 50.0 t
4. 60.0 t

**Options :**

19088964909. 1

19088964910. 2

19088964911. 3

19088964912. 4

**Question Number : 34 Question Id : 19088916255 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

For reducing the experimental error, we can use

1. Replication and local control
2. Selection of treatments and choice of experimental design
3. Selection of experimental material and data analysis
4. All of the above

**Options :**

19088964913. 1

19088964914. 2

19088964915. 3

19088964916. 4

**Question Number : 35 Question Id : 19088916256 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Ionic strength of a solution containing mixture of 0.06 M  $\text{CaCl}_2$  and 0.025 M KCl is

1. 0.205
2. 0.115
3. 0.025
4. 0.175

**Options :**

19088964917. 1

19088964918. 2

19088964919. 3

19088964920. 4

**Question Number : 36 Question Id : 19088916257 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Acid sulphate soil is represented by:

- A. Cat– clay
- B. Kari soil
- C. Kole soil
- D. Kallar soil

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

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

**Options :**

19088964921. 1

19088964922. 2

19088964923. 3

19088964924. 4

**Question Number : 37 Question Id : 19088916258 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Diameter of fine particle in sand fraction according to USDA

1. 0.25-0.10 mm
2. 0.50-0.25 mm
3. 0.05-0.002 mm
4. 2.00 -1.00 mm

**Options :**

19088964925. 1

19088964926. 2

19088964927. 3

19088964928. 4

**Question Number : 38 Question Id : 19088916259 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The equation used to describe the multilayer adsorption isotherm and to calculate the surface area

1. Freundlich isotherm
2. BET isotherm
3. Kerr equation
4. Langmuir isotherm

**Options :**

19088964929. 1

19088964930. 2

19088964931. 3

19088964932. 4

**Question Number : 39 Question Id : 19088916260 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

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

**Assertion A :**

For synthesis of  $\text{NH}_3$  by Haber Bosch process, hydrogen ( $\text{H}_2$ ) gas is required which comes from hydrocarbon by the process of steam reforming and non-catalytic partial oxidation.

**Reason R :**

Steam reforming is an endothermic process while non-catalytic partial oxidation is an exothermic process.

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

**Options :**

19088964933. 1

19088964934. 2

19088964935. 3

19088964936. 4

**Question Number : 40 Question Id : 19088916261 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Match List I with List II

List I (Book/Theory proposed/Characteristic, etc.)	List II (Author/Thinker/Name of Theory, etc.)
A. Soil colour chart	I. Jenny
B. Soil forming equation	II. Donnan
C. Membrane potential	III. Munshell
D. Ratio Law	IV. Schofield

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

**Options :**

19088964937. 1

19088964938. 2

19088964939. 3

19088964940. 4

**Question Number : 41 Question Id : 19088916262 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Match List I with List II

List I	List II
(Book/Theory proposed/Characteristic, etc.)	(Author/Thinker/Name of Theory, etc.)
A. Sulphur oxidizing bacteria	I. Desulfovibrio
B. Sulphur reducing bacteria	II. <i>Thiobacillus thiooxidans</i>
C. Iron oxidizing bacteria	III. Arthrobacter
D. Manganese oxidizing bacteria	IV. <i>Thiobacillus ferrooxidans</i>

Choose the correct answer from the options given below:

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

**Options :**

19088964941. 1

19088964942. 2

19088964943. 3

19088964944. 4

**Question Number : 42 Question Id : 19088916263 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Iron oxides, hydroxides and oxyhydroxides are

- A. Gibbsite
- B. Goethite
- C. Hematite
- D. Maghemite

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

**Options :**



19088964945. 1

19088964946. 2

19088964947. 3

19088964948. 4

**Question Number : 43 Question Id : 19088916264 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Adsorption process involves accumulation of the substance adsorbed

1. Throughout the body of the substance adsorbing it
2. On the surface of the adsorbing substance
3. In a solution in contact with the adsorbing substance
4. Below the adsorbing substance

**Options :**

19088964949. 1

19088964950. 2

19088964951. 3

19088964952. 4

**Question Number : 44 Question Id : 19088916265 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Carrier hypothesis describes the active accumulation of ions across the cell membrane which was proposed by

1. Lundegardh
2. Mitchell
3. Barber
4. Epstein

**Options :**

19088964953. 1

19088964954. 2

19088964955. 3

19088964956. 4

**Question Number : 45 Question Id : 19088916266 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is not used as urease inhibitor?

1. N-butyl thiophosphoric triamide
2. Phenyl mercury acetate
3. Dicyanamide
4. Phenylphosphorodiamidate

**Options :**

19088964957. 1

19088964958. 2

19088964959. 3

19088964960. 4

**Question Number : 46 Question Id : 19088916267 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In red soil, the dominant clay mineral present is

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

**Options :**

19088964961. 1

19088964962. 2

19088964963. 3

19088964964. 4

**Question Number : 47 Question Id : 19088916268 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

Statement I: Thin layer chromatography is adsorption chromatography

Statement II: HPLC is both adsorption and partition chromatography

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

**Options :**

19088964965. 1

19088964966. 2

19088964967. 3

19088964968. 4

**Question Number : 48 Question Id : 19088916269 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following pesticide is an oxime

1. Aldrin
2. Allethrin
3. Aldicarb
4. Atrazine

**Options :**

19088964969. 1

19088964970. 2

19088964971. 3

19088964972. 4

**Question Number : 49 Question Id : 19088916270 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Senthil has taken 10 mg of spinosad and dissolved in 1 ml of solvent. From this solution, he has to prepare 0.01 ppm of stock, how many times he will dilute

1. 1000
2. 10000
3. 100000
4. 1000000

**Options :**

19088964973. 1

19088964974. 2

19088964975. 3

19088964976. 4

**Question Number : 50 Question Id : 19088916271 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Refractive index detector is a part of which analytical equipment

1. ICP
2. UPLC
3. GC
4. Spectrophotometer

**Options :**

19088964977. 1

19088964978. 2

19088964979. 3

19088964980. 4

**Question Number : 51 Question Id : 19088916272 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Tween, Span, Triton-X are the examples of

1. Carrier
2. Surfactant
3. Binder
4. Encapsulant

**Options :**

19088964981. 1

19088964982. 2

19088964983. 3

19088964984. 4

**Question Number : 52 Question Id : 19088916273 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

Statement I: Insecticide Act was enacted in 1968

Statement II: Pesticide Management Bill was introduced to replace Insecticide act, 1968

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

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

**Options :**

19088964985. 1

19088964986. 2

19088964987. 3

19088964988. 4

**Question Number : 53 Question Id : 19088916274 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Emamectin benzoate is an insecticide of which group

1. Synthetic
2. Microbial
3. Botanical
4. Semi-synthetic

**Options :**

19088964989. 1

19088964990. 2

19088964991. 3

19088964992. 4

**Question Number : 54 Question Id : 19088916275 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

Statement I: Waiting period and MRL is interrelated

Statement II: MRL in India is fixed by CIB&RC

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

**Options :**

19088964993. 1

19088964994. 2

19088964995. 3

19088964996. 4

**Question Number : 55 Question Id : 19088916276 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Conjugate residue is

1. Pesticide or its product binds with sugar's etc.
2. Pesticide itself
3. Degradation products only
4. Residue which is bound tightly in the matrix

**Options :**

19088964997. 1

19088964998. 2

19088964999. 3

19088965000. 4

**Question Number : 56 Question Id : 19088916277 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Till date number of pesticides registered in India

1. 278
2. 291
3. 298
4. 299

**Options :**

19088965001. 1

19088965002. 2

19088965003. 3

19088965004. 4

**Question Number : 57 Question Id : 19088916278 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Essential oil can be characterised by

1. GC
2. GC-MS
3. LC
4. LC-MS

**Options :**

19088965005. 1

19088965006. 2

19088965007. 3

19088965008. 4

**Question Number : 58 Question Id : 19088916279 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following botanicals is fish toxic

1. Rotenone
2. Azadirachtin
3. Sabadilla
4. Karanjin

**Options :**

19088965009. 1

19088965010. 2

19088965011. 3

19088965012. 4

**Question Number : 59 Question Id : 19088916280 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



Which of the followings are not soil moisture sensors

- A. Tensiometer
- B. SPAD
- C. Granular matrix
- D. Infrared sensor
- E. Resistance block

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

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

**Options :**

- 19088965013. 1
- 19088965014. 2
- 19088965015. 3
- 19088965016. 4

**Question Number : 60 Question Id : 19088916281 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Two hydrogen and one oxygen atom of a water molecule are arranged at an angle of

- 1. 92.5°
- 2. 104.5°
- 3. 112.5°
- 4. 132.5°

**Options :**

- 19088965017. 1
- 19088965018. 2
- 19088965019. 3

19088965020. 4

**Question Number : 61 Question Id : 19088916282 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following salts is the main cause of permanent hardness of water?

1. Magnesium sulphate
2. Magnesium bicarbonate
3. Magnesium carbonate
4. Sodium chloride

**Options :**

19088965021. 1

19088965022. 2

19088965023. 3

19088965024. 4

**Question Number : 62 Question Id : 19088916283 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

According to the Geological survey, water with less than 1000 mg/litre of total dissolved solids is

1. Brine water
2. Slightly saline
3. Freshwater
4. Moderately saline

**Options :**

19088965025. 1

19088965026. 2

19088965027. 3

19088965028. 4

**Question Number : 63 Question Id : 19088916284 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following sectors is the largest consumer of water?

1. Agriculture
2. Industrial
3. Domestic
4. Textile

**Options :**

19088965029. 1

19088965030. 2

19088965031. 3

19088965032. 4

**Question Number : 64 Question Id : 19088916285 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

An underground layer of water-bearing permeable rock, rock fractures or unconsolidated materials is called as

1. Aquifuge
2. Aquitard
3. Aquifer
4. Aquiclude

**Options :**

19088965033. 1

19088965034. 2

19088965035. 3

19088965036. 4

**Question Number : 65 Question Id : 19088916286 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Water from precipitation that is stored in the root zone of the soil and evaporated, transpired or incorporated by plants is referred as

1. Blue water footprint
2. Grey water footprint
3. Rainbow water footprint
4. Green water footprint

**Options :**

19088965037. 1

19088965038. 2

19088965039. 3

19088965040. 4

**Question Number : 66 Question Id : 19088916287 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Crop water demand of winter wheat is about

1. 200 mm
2. 400 mm
3. 800 mm
4. 1000 mm

**Options :**

19088965041. 1

19088965042. 2

19088965043. 3

19088965044. 4

**Question Number : 67 Question Id : 19088916288 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following systems has maximum water saving efficiency

1. Sprinkler system
2. Central Pivot system
3. Raingun system
4. Trickle system

**Options :**

19088965045. 1

19088965046. 2

19088965047. 3

19088965048. 4

**Question Number : 68 Question Id : 19088916289 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Deviation of rainfall from normal indicates which of the following types of drought

1. Agricultural drought
2. Meteorological drought
3. Hydrological drought
4. Environmental drought

**Options :**

19088965049. 1

19088965050. 2

19088965051. 3

19088965052. 4

**Question Number : 69 Question Id : 19088916290 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The present Director of ICAR-IISWC is

1. Dr. V.K. Singh
2. Dr. J.S. Samra
3. Dr. P.R. Ojasvi
4. Dr. M. Madhu

**Options :**

19088965053. 1

19088965054. 2

19088965055. 3

19088965056. 4

**Question Number : 70 Question Id : 19088916291 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

One of the water management Institutes of ICAR is located at

1. Bhubaneswar
2. Bhopal
3. Jammu
4. Coimbatore

**Options :**

19088965057. 1

19088965058. 2

19088965059. 3

19088965060. 4

## **Part C : Water Science and Technology**

**Section Id :** 190889349

**Section Number :** 3

**Section type :** Online

**Mandatory or Optional :** Mandatory

<b>Number of Questions :</b>	50
<b>Number of Questions to be attempted :</b>	50
<b>Section Marks :</b>	200
<b>Enable Mark as Answered Mark for Review and Clear Response :</b>	Yes
<b>Sub-Section Number :</b>	1
<b>Sub-Section Id :</b>	190889389
<b>Question Shuffling Allowed :</b>	Yes

**Question Number : 71 Question Id : 19088916292 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The Thiessen polygon method for calculating the average precipitation

- A. Allocates space according to station spacing as well as precipitation
- B. Shows orographic effects
- C. Takes into account the storm morphology
- D. Easily adoptable on computers

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

1. A only
2. A and B only
3. C and D only
4. D only

**Options :**

- 19088965061. 1
- 19088965062. 2
- 19088965063. 3
- 19088965064. 4

**Question Number : 72 Question Id : 19088916293 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

To know the trend present in the rainfall data which of the following presentation forms is used

1. Hyetograph
2. Moving average
3. Time series plot
4. Ordinate graph

**Options :**

19088965065. 1

19088965066. 2

19088965067. 3

19088965068. 4

**Question Number : 73 Question Id : 19088916294 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The percentage of fresh water available on the land surface in the form of rivers, lakes, reservoirs etc. is

1. 3
2. 75
3. 1
4. 24

**Options :**

19088965069. 1

19088965070. 2

19088965071. 3

19088965072. 4

**Question Number : 74 Question Id : 19088916295 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



Match List I with List II

List I	List II
(Book/Theory proposed/Characteristic, etc.)	(Author/Thinker/Name of Theory, etc.)
A. Dalton's law	I. Weir
B. Faraday's law	II. Flood routing
C. Khosla's formula	III. Discharge
D. Villemonte formula	IV. Evaporation
E. Muskingum method	V. Water balance

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

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

**Options :**

19088965073. 1

19088965074. 2

19088965075. 3

19088965076. 4

**Question Number : 75 Question Id : 19088916296 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the followings is not the concept of integrated watershed management programme

1. Top-down approach
2. Farmer's first
3. Convergence and linkages
4. Capacity building

**Options :**

19088965077. 1

19088965078. 2

19088965079. 3

19088965080. 4

**Question Number : 76 Question Id : 19088916297 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Write in sequence the implementation of different watershed programmes in India

A. IWDP

B. DDP

C. NWDPRA

D. ORP

E. Jalshakti

Choose the *correct* answer from the options given below

1. D,B,C,A,E

2. D,C,B,E,A

3. B,D,A,C,E

4. A,D,C,E,B

**Options :**

19088965081. 1

19088965082. 2

19088965083. 3

19088965084. 4

**Question Number : 77 Question Id : 19088916298 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:**

The basic knowledge of land capability classification is a pre-requisite for effective planning, implementation and execution of soil and water conservation programmes

**Statement II:**

The basic principle of soil and water conservation is "to use the land according to this need and treat the land according to its capability"

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

**Options :**

19088965085. 1

19088965086. 2

19088965087. 3

19088965088. 4

**Question Number : 78 Question Id : 19088916299 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The length of headwall extension of a drop spillway for 2.3 m depth of gully and 2 m fall for a flow of  $1.711\text{m}^3/\text{sec}$  will be

1. 1.5 m
2. 2.1 m
3. 3 m
4. 4.2 m

**Options :**

19088965089. 1

19088965090. 2

19088965091. 3

19088965092. 4

**Question Number : 79 Question Id : 19088916300 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following mechanical measures is suitable for erosion control in impermeable soils with <6 % land slope and <800 mm annual rainfall

1. Contour bund
2. Graded bund
3. Contour terrace wall
4. Staggered trench

**Options :**

19088965093. 1

19088965094. 2

19088965095. 3

19088965096. 4

**Question Number : 80 Question Id : 19088916301 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following soil types has a low detachability rate?

1. Fine clay
2. Coarse sand
3. Silt loam
4. Organic matter

**Options :**

19088965097. 1

19088965098. 2

19088965099. 3

19088965100. 4

**Question Number : 81 Question Id : 19088916302 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The commonly used value of the roughness coefficient in Manning's formula for designing the channel capacity in a graded terrace is

1. 0.2
2. 0.3
3. 0.4
4. 0.03

**Options :**

19088965101. 1

19088965102. 2

19088965103. 3

19088965104. 4

**Question Number : 82 Question Id : 19088916303 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The overall movement of wind erosion can be described as:

1. Initiation of movement, transportation and deposition
2. Suspension, saltation and surface creep
3. Detachment, transportation and deposition
4. Detachment, rolling and saltation

**Options :**

19088965105. 1

19088965106. 2

19088965107. 3

19088965108. 4

**Question Number : 83 Question Id : 19088916304 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following statements are correct w.r.t. farm ponds and embankments

- A. A narrow section of the valley with gentle slopes are preferable for site of construction
- B. The site should not cause excessive seepage loss
- C. A mixture of coarse and fine textured soils are not good foundation materials
- D. For low embankments, the nature of foundation materials is not critical

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

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

**Options :**

19088965109. 1

19088965110. 2

19088965111. 3

19088965112. 4

**Question Number : 84 Question Id : 19088916305 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

If the average depth of irrigation of wheat crop in 1 ha area in a duration of 50 hours is 7.2 cm, then the average discharge of the water lifting device will be

- 1. 1.47 cusec
- 2. 0.147 cusec
- 3. 7.08 lps
- 4. 0.11328 cumec

**Options :**

19088965113. 1

19088965114. 2

19088965115. 3

19088965116. 4

**Question Number : 85 Question Id : 19088916306 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following statement(s) is/are correct:

- A. Weirs require a considerable loss of head
- B. Cipoletti weirs require corrections for end contractions
- C. Water meters are usually used to measure irrigation water in pipeline system
- D. For free flow, the ratio of inlet-flow depth to cut throat flume length should preferably be more than 0.4

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

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

**Options :**

19088965117. 1

19088965118. 2

19088965119. 3

19088965120. 4

**Question Number : 86 Question Id : 19088916307 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Re-arrange the following procedures in the lining of canals with low density polyethylene film in their appropriate sequence:

- A. Laying of polyethelene film along the sides and bottom to the canal
- B. Placing a layer of 1.2 cm thick sand to provide proper cushion to the polyethelene film
- C. Excavation of the canal and transport of excavated soil to the canal embankment
- D. Covering the film with soil to a thickness of 25 cm

Choose the *correct* answer from the options given below

- 1. C, B, A, D
- 2. C,A,B,D
- 3. D, A, B, C
- 4. B, C, D, A

**Options :**

19088965121. 1

19088965122. 2

19088965123. 3

19088965124. 4

**Question Number : 87 Question Id : 19088916308 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Furrows spaced at 50 cm apart with a slope of 0.2% in a sandyloam soil with stream size of 2 lps if reached at the lower end in 2 hours, then furrow length will be

- 1. 576 m
- 2. 288 m
- 3. 360 m
- 4. 720 m

**Options :**

19088965125. 1

19088965126. 2

19088965127. 3

19088965128. 4



**Question Number : 88 Question Id : 19088916309 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The components of project irrigation efficiency are

1. Water distribution efficiency and water storage efficiency
2. Water conveyance efficiency and water distribution efficiency
3. Water conveyance efficiency and water application efficiency
4. Water conveyance efficiency, water distribution efficiency and water application efficiency

**Options :**

19088965129. 1

19088965130. 2

19088965131. 3

19088965132. 4

**Question Number : 89 Question Id : 19088916310 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

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

List I	List II
A. Chambal command area	I. Tile drain spacing
B. Hooghoudt equation	II. Over-exploitation of groundwater
C. Sub-surface drainage	III. Leaching requirement
D. Bio-drainage	IV. Waterlogging and salinity problem
E. Sea water intrusion	V. Physically and chemically degraded soil

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

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

**Options :**

19088965133. 1

19088965134. 2

19088965135. 3

19088965136. 4

**Question Number : 90 Question Id : 19088916311 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Drip irrigation is the application of water through emitters on or below the soil surface at an operating pressure of

1. 10 to 50 kPa
2. 0.1 to 0.5 kg/cm<sup>2</sup>
3. 0.2 to 2 kg/cm<sup>2</sup>
4. 100 to 300 kPa

**Options :**

19088965137. 1

19088965138. 2

19088965139. 3

19088965140. 4

**Question Number : 91 Question Id : 19088916312 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the followings is not a problem faced during fertigation

1. Backflow prevention
2. Back washing
3. Back- siphonage
4. Back pressure

**Options :**

19088965141. 1

19088965142. 2

19088965143. 3

19088965144. 4

Question Number : 92 Question Id : 19088916313 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List I with List II w.r.t. type of emitters/drippers according to their classification based on

List I	List II
A. Button dripper	I. Design
B. Disc source emitter	II. Discharge
C. Long path emitter	III. Bubblers
D. Drip tape	IV. Placement
E. Point source emitter	V. Emission principle

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

**Options :**

19088965145. 1

19088965146. 2

19088965147. 3

19088965148. 4

Question Number : 93 Question Id : 19088916314 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A lateral has 15 sprinklers spaced 10 m apart. The laterals are spaced 20 m on the main line. Determine the fertilizer to be applied to each setting when the recommended fertilizer dose is 80 kg/ha

1. 16 kg
2. 20 kg
3. 24 kg
4. 30 kg

**Options :**

19088965149. 1

19088965150. 2

19088965151. 3

19088965152. 4

**Question Number : 94 Question Id : 19088916315 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following statements are correct

- A. Maximum coverage is attained when the jet emerges from the sprinkler at an angle of  $30^{\circ}$  to  $32^{\circ}$  above the horizontal
- B. At the nozzles of the sprinklers the potential head is converted to velocity head
- C. Sprinkler irrigation is usually suitable for heavy clay soils
- D. Land levelling is not essential for irrigation with sprinklers

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

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

**Options :**

19088965153. 1

19088965154. 2

19088965155. 3

19088965156. 4

**Question Number : 95 Question Id : 19088916316 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following statements are correct

- A. The major factor influencing the efficiency of a well designed sprinkler irrigation system is operating pressure
- B. The width of land covered by a perforated spray type sprinkler system ranges from 6 to 15 cm
- C. The minimum satisfactory values of uniformity coefficient under normal conditions of pressure and wind velocity is 85 %
- D. The maximum water application rate of a sprinkler in light sandyloam soils on land with slope ranging from 1 to 5 % is 2 cm/hour

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

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

**Options :**

- 19088965157. 1
- 19088965158. 2
- 19088965159. 3
- 19088965160. 4

**Question Number : 96 Question Id : 19088916317 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Who has propounded the four water concept alongwith FAO agencies

- 1. Rattan Lal
- 2. R.H. Hawkins
- 3. Hanumatha Rao
- 4. M. Visvesvaraya

**Options :**

- 19088965161. 1
- 19088965162. 2

19088965163. 3

19088965164. 4

**Question Number : 97 Question Id : 19088916318 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

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

**Assertion A:**

Dhawan (1989) argues that investment on major irrigation projects be beneficially placed in low rainfall areas.

**Reason R:**

Thw high rainfall areas have less insulation against fluctuation in yields and yields are comparable to irrigated areas.

In the 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

**Options :**

19088965165. 1

19088965166. 2

19088965167. 3

19088965168. 4

**Question Number : 98 Question Id : 19088916319 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Match **List I** with **List II** with classification for dry climate

List I	List II
A. Koppen's	I. Refinement in Thornthwaite
B. Thornthwaite	II. P/PET
C. Martonne's	III. Moisture Index
D. Meig's	IV. Climate to vegetation
E. UNESCO's	V. Aridity Index

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

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

**Options :**

19088965169. 1

19088965170. 2

19088965171. 3

19088965172. 4

**Question Number : 99 Question Id : 19088916320 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Persian wheel lifts water to a height of about 10 m, but its efficiency is considerably reduced when the lift exceeds

1. 5 m
2. 7.5 m
3. 10 m
4. 12.5 m

**Options :**

19088965173. 1

19088965174. 2

19088965175. 3

19088965176. 4

**Question Number : 100 Question Id : 19088916321 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following statements are correct

- A. The minimum wind speed required for the working of a windmill ranges from 6 to 8 km/hour
- B. A foot valve is essential in all vertical centrifugal pumps
- C. As compared to ordinary volute centrifugal pumps, jet pumps are low in efficiency
- D. A centrifugal pump will not function until the pump casing is completely filled with water

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

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

**Options :**

19088965177. 1

19088965178. 2

19088965179. 3

19088965180. 4

**Question Number : 101 Question Id : 19088916322 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



Given below are two statements

**Statement I:**

An unconfined aquifer is one lying below an impervious stratum in which water is under atmospheric pressure.

**Statement II:**

A gravity well derives its water supply from a confined aquifer.

In the light of the above statements, choose the *correct* 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

**Options :**

19088965181. 1

19088965182. 2

19088965183. 3

19088965184. 4

**Question Number : 102 Question Id : 19088916323 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

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

List I	List II
A. Artesian aquifer	I. Jetting
B. Percolation well	II. Cable tool drilling
C. Driven well	III. Compressed air
D. Bailer	IV. Confining formation
E. Well development	V. Unconfined aquifer

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

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

**Options :**

19088965185. 1

19088965186. 2

19088965187. 3

19088965188. 4

**Question Number : 103 Question Id : 19088916324 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In groundwater management which of the following factors need not to be considered:

1. Aquifer yield
2. Groundwater discharge
3. Groundwater quality
4. Legal factors

**Options :**

19088965189. 1

19088965190. 2

19088965191. 3

19088965192. 4

**Question Number : 104 Question Id : 19088916325 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following factors influence the suitability of water for irrigation

A. Quality of irrigation water

B. Soil type

C. Depth of water table

D. Hard pan

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

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

**Options :**

19088965193. 1

19088965194. 2

19088965195. 3

19088965196. 4

**Question Number : 105 Question Id : 19088916326 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The depth of water for leaching is 150 mm. Calculate evapotranspiration of crop if leaching requirement is 20%.

1. 900 mm
2. 600 mm
3. 225 mm
4. 1200 mm

**Options :**

19088965197. 1

19088965198. 2

19088965199. 3

19088965200. 4

Question Number : 106 Question Id : 19088916327 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following crops is not salt tolerant

1. Wheat
2. Barley
3. Apple
4. Date palm

**Options :**

19088965201. 1

19088965202. 2

19088965203. 3

19088965204. 4

Question Number : 107 Question Id : 19088916328 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Highly dispersed alkali soils are devoid of soil organic matter and green manuring with *Dhaincha* in summer helpful in reclaiming such soils, because

- A. It is tolerant to salts condition
- B. It improves soil impermeability
- C. Its rate of decomposition is fast
- D. Its cell sap is alkali in nature

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

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

**Options :**

19088965205. 1

19088965206. 2

19088965207.3

19088965208.4

**Question Number : 108 Question Id : 19088916329 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The carrying capacity of a water course generally varies from

1. 250 to 750 lps
2. 0.03 to 0.12 cumec
3. 15 to 30 lps
4. 0.75 to 5.5 cumec

**Options :**

19088965209.1

19088965210.2

19088965211.3

19088965212.4

**Question Number : 109 Question Id : 19088916330 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following statements are **not correct**

- A. Barrak river, the head stream of Meghna rises in the hills of Meghalaya state
- B. The important west flowing rivers of India are Godavari and Kaveri
- C. Kerala has been termed the land of rice and tanks
- D. Water rates should be levied on a crop basis including irrigation from tubewells

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

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

**Options :**

19088965213. 1

19088965214. 2

19088965215. 3

19088965216. 4

**Question Number : 110 Question Id : 19088916331 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:**

In Warabandi method, the available water is allocated to cultivators in proportion to their landholdings.

**Statement II:**

In Warabandi systems, the distribution of water is carried out by keeping the time of stream flow as constant and regulating the stream of water.

In light of the above statements, choose the *correct* 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

**Options :**

19088965217. 1

19088965218. 2

19088965219. 3

19088965220. 4

**Question Number : 111 Question Id : 19088916332 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The rice soils of West Bengal are red soils with a pH between

1. 5 and 6
2. 7.2 and 9.3
3. 6.2 and 6.6
4. 4.3 and 5.0

**Options :**

19088965221. 1

19088965222. 2

19088965223. 3

19088965224. 4

**Question Number : 112 Question Id : 19088916333 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

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

**Assertion A :**

Capillary water is the only fluid water bearing solutes, that remain in the soil for any length of time, if drainage is satisfactory.

**Reason R :**

Capillary water functions both physically and chemically as 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

**Options :**

19088965225. 1

19088965226. 2

19088965227. 3

19088965228. 4

**Question Number : 113 Question Id : 19088916334 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



Which of the following statements are correct

- A. Tensiometers satisfactorily measure the entire range of available moisture in all the soil types.
- B. Soil moisture tension indicates the amount of moisture in the soil.
- C. Electrical resistance meter is the most practical instrument to measure moisture changes in clay soils.
- D. The most essential function of water in a plant is as a solvent in which gases, minerals and other solutes enter the plant cell.

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

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

**Options :**

19088965229. 1

19088965230. 2

19088965231. 3

19088965232. 4

**Question Number : 114 Question Id : 19088916335 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In most crops the maximum available moisture deficiency is about

- 1. 0.50
- 2. 0.35
- 3. 0.65
- 4. 0.85

**Options :**

19088965233. 1

19088965234. 2

19088965235. 3

19088965236. 4

**Question Number : 115 Question Id : 19088916336 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following statements are correct

- A. Field capacity is the upper limit of available moisture range in soil and plant relationship.
- B. Surface tension in soil decreases with decrease in soil moisture content.
- C. The specific surface area of a soil system varies directly with the size of the soil particles.
- D. The rate at which the plants respire decreases in response to the decline in soil moisture content.

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

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

**Options :**

19088965237. 1

19088965238. 2

19088965239. 3

19088965240. 4

**Question Number : 116 Question Id : 19088916337 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following crops is least efficient in un-irrigated conditions

- 1. Wheat
- 2. Cotton
- 3. Groundnut
- 4. Oilseed

**Options :**

19088965241. 1

19088965242. 2

19088965243. 3

19088965244. 4

**Question Number : 117 Question Id : 19088916338 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Write the sequence of development of methods of estimating evapotranspiration

- A. Thornthwaite
- B. Method given by Doorenbos and Pruitt
- C. Blaney-Criddle
- D. Radiation

Choose the *correct* answer from the options given below

- 1. A, C, D, B
- 2. C, A, B, D
- 3. C, D, A, B
- 4. B, A, C, D

**Options :**

19088965245. 1

19088965246. 2

19088965247. 3

19088965248. 4

**Question Number : 118 Question Id : 19088916339 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

According to Gates and Hanks (1967), evapotranspiration reaches its maximum when crop foliage covers what per cent of the ground?

1. 50
2. 60
3. 70
4. 80

**Options :**

19088965249. 1

19088965250. 2

19088965251. 3

19088965252. 4

**Question Number : 119 Question Id : 19088916340 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the followings is used to measure both effective rainfall and percolation loss?

1. Drum culture technique
2. Water balance method
3. Piche atmometer
4. Weighing bridge

**Options :**

19088965253. 1

19088965254. 2

19088965255. 3

19088965256. 4

**Question Number : 120 Question Id : 19088916341 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the followings is related to net long wave radiation

1. Stefan Boltzmann constant
2. Angstrom value
3. Canopy reflection coefficient
4. Psychrometric constant

**Options :**

19088965257. 1

19088965258. 2

19088965259. 3

19088965260. 4