

National Testing Agency

Question Paper Name :	Irrigation Water Management Engineering 17th September Shift 2
Subject Name :	Irrigation Water Management Engineering or Irrigation and Drainage Engineering
Creation Date :	2021-09-17 18:54:42
Duration :	120
Total Marks :	480
Display Marks:	Yes

Irrigation Water Management Engineering or Irrigation and Drainage Engineering

Group Number :	1
Group Id :	190889118
Group Maximum Duration :	0
Group Minimum Duration :	120
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	480
Is this Group for Examiner? :	No

Part A: General Knowledge

Section Id :	190889278
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Section Number : 1
Section type : Online
Mandatory or Optional : Mandatory
Number of Questions : 20
Number of Questions to be attempted : 20
Section Marks : 80
Enable Mark as Answered Mark for Review and Clear Response : Yes
Sub-Section Number : 1
Sub-Section Id : 190889318
Question Shuffling Allowed : Yes

Question Number : 1 Question Id : 19088913462 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 :

19088953741. 1
19088953742. 2
19088953743. 3
19088953744. 4

Question Number : 2 Question Id : 19088913463 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 :

19088953745. 1

19088953746. 2

19088953747. 3

19088953748. 4

Question Number : 3 Question Id : 19088913464 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 :

19088953749. 1

19088953750. 2

19088953751. 3

19088953752. 4

Question Number : 4 Question Id : 19088913465 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 :

19088953753. 1

19088953754. 2

19088953755. 3

19088953756. 4

Question Number : 5 Question Id : 19088913466 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 B₂?

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

Options :

19088953757. 1

19088953758. 2

19088953759. 3

19088953760. 4

Question Number : 6 Question Id : 19088913467 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 :

19088953761. 1

19088953762. 2

19088953763. 3

19088953764. 4

Question Number : 7 Question Id : 19088913468 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 :

19088953765. 1

19088953766. 2

19088953767. 3

19088953768. 4

Question Number : 8 Question Id : 19088913469 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 :

19088953769. 1

19088953770. 2

19088953771. 3

19088953772. 4

Question Number : 9 Question Id : 19088913470 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 :

19088953773. 1

19088953774. 2

19088953775. 3

19088953776. 4

Question Number : 10 Question Id : 19088913471 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 :

19088953777. 1

19088953778. 2

19088953779. 3

19088953780. 4

Question Number : 11 Question Id : 19088913472 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 :

19088953781. 1

19088953782. 2

19088953783. 3

19088953784. 4

Question Number : 12 Question Id : 19088913473 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 :

19088953785. 1

19088953786. 2

19088953787. 3

19088953788. 4

Question Number : 13 Question Id : 19088913474 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 :

19088953789. 1

19088953790. 2

19088953791. 3

19088953792. 4

Question Number : 14 Question Id : 19088913475 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 :

19088953793. 1

19088953794. 2

19088953795. 3

19088953796. 4

Question Number : 15 Question Id : 19088913476 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 :

19088953797. 1

19088953798. 2

19088953799. 3

19088953800. 4

Question Number : 16 Question Id : 19088913477 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 :

19088953801. 1

19088953802. 2

19088953803. 3

19088953804. 4

Question Number : 17 Question Id : 19088913478 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 :

19088953805. 1

19088953806. 2

19088953807. 3

19088953808. 4

Question Number : 18 Question Id : 19088913479 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 :

19088953809. 1

19088953810. 2

19088953811. 3

19088953812. 4

Question Number : 19 Question Id : 19088913480 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 :

19088953813. 1

19088953814. 2

19088953815. 3

19088953816. 4

Question Number : 20 Question Id : 19088913481 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 :

19088953817. 1

19088953818. 2

19088953819. 3

19088953820. 4

Part B Core : Agricultural Engineering and Technology

Section Id :	190889279
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	200
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	190889319
Question Shuffling Allowed :	Yes

Question Number : 21 Question Id : 19088913482 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: The hammer mill is a machine, which is commonly used for spice grinding.

Reason R: The hammer mill works on impact force and causes less heating of spices during grinding.

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

Options :

19088953821. 1

19088953822. 2

19088953823. 3

19088953824. 4

Question Number : 22 Question Id : 19088913483 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements

Statement I: The fluid flow in a tube will be laminar, if the Reynold's number is less than 4100.

Statement II: The heat transfer will be more, if the fluid flow changes from laminar to turbulent zone.

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 :

19088953825. 1

19088953827. 3

19088953828. 4

Question Number : 23 Question Id : 19088913484 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements

Statement I:The rubber roll sheller is an equipment commonly used in the modern rice mills.

Statement II:The milling of wheat can also be done in the rubber roll sheller.

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 :

19088953829. 1

19088953830. 2

19088953831. 3

19088953832. 4

Question Number : 24 Question Id : 19088913485 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The moisture content of 35% wet basis for a grain is almost equivalent to

1. 26% dry basis
2. 44% dry basis
3. 54% dry basis
4. 185% dry basis

Options :

19088953833. 1

19088953834. 2

19088953835. 3

19088953836. 4

Question Number : 25 Question Id : 19088913486 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following does NOT involve heat exchangers ?

1. LSU dryer
2. Boiler
3. Pasteuriser
4. Evaporator

Options :

19088953837. 1

19088953838. 2

19088953839. 3

19088953840. 4

Question Number : 26 Question Id : 19088913487 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. Sphericity	I. Porosity
B. Volume	II. Dielectric property
C. Microwave	III. Platform scale method
D. Toluene	IV. Shape

Choose the correct answer from the options given below:

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

Options :



19088953841. 1

19088953842. 2

19088953843. 3

19088953844. 4

**Question Number : 27 Question Id : 19088913488 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Force(s) responsible for size reduction of material in hammer mill includes:

A. Compression

B. Shear

C. Impact

D. Cutting

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

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

Options :

19088953845. 1

19088953846. 2

19088953847. 3

19088953848. 4

**Question Number : 28 Question Id : 19088913489 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 : Relative humidity of air reduces with an increase in dry bulb temperature.

Reason R : Mass of water present in the air affects relative humidity.

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 :

19088953849. 1

19088953850. 2

19088953851. 3

19088953852. 4

Question Number : 29 Question Id : 19088913490 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is used for calculation of lateral pressure in deep bins?

1. Janssen formula
2. Rankine formula
3. Henderson equation
4. Plank equation

Options :

19088953853. 1

19088953854. 2

19088953855. 3

19088953856. 4

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which process destroys only pathogenic organisms?

1. Blanching
2. Pasteurization
3. Sterilization
4. Canning

Options :

19088953857. 1

19088953858. 2

19088953859. 3

19088953860. 4

Question Number : 31 Question Id : 19088913492 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Calculate the time required for ploughing 15 ha of land by a 2-bottom, 50 cm plough, if the speed of the plough is 5 km.h^{-1} and time lost in turning is 10 per cent.

1. 11.11 hour
2. 22.22 hour
3. 33.33 hour
4. 44.44 hour

Options :

19088953861. 1

19088953862. 2

19088953863. 3

19088953864. 4

Question Number : 32 Question Id : 19088913493 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A pair of bullocks exerts 240 kg pull at 60° to the horizontal, while making a V-shaped furrow, 25 cm width and 10 cm deep. Assuming the speed of ploughing 1.8 km.h^{-1} , calculate the horse power developed by the bullocks.

1. 0.6 HP
2. 0.8 HP
3. 1.0 HP
4. 1.2 HP

Options :

19088953865. 1

19088953866. 2

19088953867. 3

19088953868. 4

Question Number : 33 Question Id : 19088913494 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

During calibration of seed drill, following data are noted

a) number of rotation of wheel = 450

b) seed dropped = 25 kg

c) number of furrow openers = 8

d) spacing between furrows = 35 cm

e) wheel diameter = 25 cm

Calculate the seed rate in kg.ha^{-1} .

1. 150
2. 200
3. 250
4. 300

Options :

19088953869. 1

19088953870. 2

19088953871. 3

19088953872. 4

Question Number : 34 Question Id : 19088913495 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A four cylinder 4-stroke gas engine has cylinder diameter of 20 cm; stroke-bore ratio is 1.5; clearance volume 2500 cm^3 ; engine speed 300 rpm; mean effective pressure 5 kg.cm^{-2} ; mechanical efficiency 70%. Calculate the IHP of the engine in kW.

1. 23.45
2. 31.43
3. 46.90
4. 62.86

Options :

19088953873. 1

19088953874. 2

19088953875. 3

19088953876. 4

Question Number : 35 Question Id : 19088913496 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A field sprayer is operated by a tractor at a speed of 6 km.h^{-1} . The sprayer boom has 15 nozzles spaced 40 cm apart. Time lost in turning is 8% and tank filling is 7%. Calculate the area covered per hour.

1. 1.53 ha
2. 1.80 ha
3. 3.06 ha
4. 3.60 ha

Options :

19088953877. 1

19088953878. 2

19088953879. 3

19088953880. 4

Question Number : 36 Question Id : 19088913497 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The diameter of a disc plough is:

1. Proportional to the maximum depth of ploughing and inversely proportional to the cosine of the tilt angle.
2. Proportional to the depth of ploughing and inversely proportional to the tilt angle
3. Proportional to the radius of curvature of the disc as well as cosine of apex angle
4. Inversely proportional to the radius of curvature of disc and sine of disc angle.

Options :

19088953881. 1

19088953882. 2

19088953883. 3

19088953884. 4

Question Number : 37 Question Id : 19088913498 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following statements is NOT correct for a turbocharger fitted to a tractor engine?

1. Turbocharger is a supercharger driven by exhaust gas turbine.
2. Exhaust gas from the engine enter the turbine housing and drive the turbine wheel as well as compressor wheel.
3. Turbocharger increases the density of the air delivered to the engine cylinder thereby allows the engine to burn more fuel to develop more power.
4. Though a turbocharged engine develops more power than a naturally aspired engine, it consumes more fuel per unit power developed.

Options :

19088953885. 1

19088953886. 2

19088953887. 3

19088953888. 4

Question Number : 38 Question Id : 19088913499 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement-I: Hydraulic system in an agricultural tractor reduce the effort required for a particular function, provide easy power transmission from rotation to translation, easy and cheap overload protection, easy steering, braking and implement lifting etc.

Statement-II: Efficiencies of hydraulic systems are comparatively less than that of mechanical systems.

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

1. Statement-I and Statement-II, both are true
2. Statement-I and Statement-II, both are false
3. Statement-I is true but Statement-II is false
4. Statement-I is false but Statement-II is true

Options :

19088953889. 1

19088953890. 2

19088953891. 3

19088953892. 4

Question Number : 39 Question Id : 19088913500 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List I (Alloying elements in steel) with List II (Property conferred on steel by the element)

List I	List II
Alloying elements in steel	Property conferred on steel by the element
A. Nickle	I. Corrosion resistance
B. Chromium	II. Magnetic permeability
C. Tungsten	III. Heat resistance
D. Silicon	IV. Hardenability

Choose the correct answer from the options given below

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

Options :

19088953893. 1

19088953894. 2

19088953895. 3

19088953896. 4

Question Number : 40 Question Id : 19088913501 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In a petrol engine, the voltage required to jump spark in a given spark-plug gap does NOT depend on:

1. Compression ratio of engine
2. Indicated mean effective pressure
3. Speed of the engine
4. Size of the engine

Options :

19088953897. 1

19088953898. 2

19088953899. 3

Question Number : 41 Question Id : 19088913502 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If soil bulk density is excess of 1.6 g.cm^{-3} , it will

- A. Restrict root growth
- B. Enhance aeration
- C. Restrict water movement
- D. Reduce level of porosity
- E. Enhance soil fertility

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 C only
4. A, B and E only

Options :

19088953901. 1

19088953902. 2

19088953903. 3

19088953904. 4

Question Number : 42 Question Id : 19088913503 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following are the characteristics of an airblast sprayer?

- A. It uses air stream to carry droplets
- B. It is used for spraying orchard crops
- C. It is used for spraying row crops
- D. It uses energy from hydraulic pressure
- E. It uses comparatively larger spray droplets than those of high-pressure sprayers

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

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

Options :

19088953905. 1

19088953906. 2

19088953907. 3

19088953908. 4

**Question Number : 43 Question Id : 19088913504 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 : Horizontal axis lift type wind mills are mostly used.

Reason R : Lift type wind mills have high tip speed ratio in the range of 13:1.

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

Options :

19088953909. 1

19088953910. 2

19088953911. 3

19088953912. 4

Question Number : 44 Question Id : 19088913505 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following parameters can be indirectly measured using Linear variable differential transducer (LVDT)?

A. Surface tension

B. Pressure

C. Temperature

D. Acceleration

E. Force

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

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

Options :

19088953913. 1

19088953914. 2

19088953915. 3

19088953916. 4

Question Number : 45 Question Id : 19088913506 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

How many frequent weighing scales are there in general-purpose sound measuring equipment?

1. One
2. Two
3. Three
4. Four

Options :

19088953917. 1

19088953918. 2

19088953919. 3

19088953920. 4

**Question Number : 46 Question Id : 19088913507 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

The amount of solar radiation striking the earth is called

1. Solar luminosity
2. Solar constant
3. Insolation
4. Solarization

Options :

19088953921. 1

19088953922. 2

19088953923. 3

19088953924. 4

**Question Number : 47 Question Id : 19088913508 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 : Wind turbine machines intended for generating substantial power should have large rotors and located in areas of high wind speeds.

Reason R : Maximum power available in the wind varies according to the square of rotor diameter and square of wind speed.

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 :

19088953925. 1

19088953926. 2

19088953927. 3

19088953928. 4

Question Number : 48 Question Id : 19088913509 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements

Statement I: Fuel cell converts chemical energy into electrical energy.

Statement II: Fuel cell works on the principle of photo-electric effect.

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 :

19088953929. 1

19088953930. 2

Question Number : 49 Question Id : 19088913510 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. Fuel cell	I. Light energy into electrical energy
B. Photovoltaic cell	II. Kinetic energy into electrical energy
C. Turbine & Generator	III. Chemical energy into electrical energy
D. Solar cooker	IV. Light energy into heat energy
E. Combustion engine	V. Mechanical energy into electrical energy
F. Generator	VI. Chemical energy into mechanical energy

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

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

Options :

19088953933. 1

19088953934. 2

19088953935. 3

19088953936. 4

Question Number : 50 Question Id : 19088913511 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Consider the statements given below:

- A. Biodiesel production from vegetable oils involves anaerobic fermentation
- B. Pyranometers can be used to measure global radiation
- C. Janta biogas plant is a fixed dome biogas plant
- D. Savonius and Darrieus rotors are example of vertical axis wind turbines
- E. Wind vanes are used for measurement of wind speed

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

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

Options :

19088953937. 1

19088953938. 2

19088953939. 3

19088953940. 4

Question Number : 51 Question Id : 19088913512 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

What is annual average rainfall in India?

- 1. 100 cm
- 2. 119 cm
- 3. 150 cm
- 4. 200 cm

Options :

19088953941. 1

19088953942. 2

19088953943. 3

19088953944. 4

Question Number : 52 Question Id : 19088913513 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Rain is said to be light rain, if rainfall intensity is:

1. < 2.5 mm/h
2. 2.6-5.0 mm/h
3. 5.1-7.5 mm/h
4. 7.6-10 mm/h

Options :

19088953945. 1
19088953946. 2
19088953947. 3
19088953948. 4

Question Number : 53 Question Id : 19088913514 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Steps of water Erosion are:

- A. Detachment
- B. Transportation
- C. Deposition

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

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

Options :

19088953949. 1
19088953950. 2

19088953952. 4

Question Number : 54 Question Id : 19088913515 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The day to day activities of a watershed development project under National Watershed Development Project for Rainfed Areas (NWDPRA) are carried out by:

1. Watershed Development Team
2. Watershed Committee
3. Watershed Association
4. User Group

Options :

19088953953. 1

19088953954. 2

19088953955. 3

19088953956. 4

Question Number : 55 Question Id : 19088913516 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Green house structure should be designed for:

- A. Dead Load
- B. Live load
- C. Wind load
- D. Snow load

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

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

Options :

19088953957. 1

19088953958. 2

19088953959. 3

19088953960. 4

**Question Number : 56 Question Id : 19088913517 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

One bar pressure is equal to how many psi?

1. 14.5
2. 13.5
3. 4.5
4. 3.5

Options :

19088953961. 1

19088953962. 2

19088953963. 3

19088953964. 4

**Question Number : 57 Question Id : 19088913518 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

LEPA irrigation stands for

1. Low Energy Pressurized Application
2. Large Emitter Pressurized Application
3. Low Energy Precision Application
4. Large Emitter Precision Application

Options :

19088953965. 1

19088953966. 2

19088953967. 3

19088953968. 4

Question Number : 58 Question Id : 19088913519 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
Dimensionless Number	Ratio
A. Reynold's Number	I. Inertia force to viscous force
B. Euler's Number	II. Inertia force to gravitational force
C. Froude's Number	III. Inertia force to surface tension force
D. Weber's Number	IV. Inertia force to elastic force
	V. Inertia force to pressure force

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

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

Options :

19088953969. 1

19088953970. 2

19088953971. 3

19088953972. 4

Question Number : 59 Question Id : 19088913520 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Considering the efficiency of different irrigation methods, which of the following sequence is correct?

1. Drip > Sprinkler > Furrow > Check basin
2. Drip > Sprinkler > Check basin > Furrow
3. Drip > Furrow > Sprinkler > Check basin
4. Drip > Furrow > Check basin > Sprinkler

Options :

19088953973. 1

19088953974. 2

19088953975. 3

19088953976. 4

Question Number : 60 Question Id : 19088913521 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following statements about tensiometers are true?

- A. Tensiometers are used for estimation of soil moisture
- B. Useful limit of most tensiometers is at about 0.85 atmospheres
- C. Tensiometers are not well suited for sandy soils
- D. Tensiometers provide direct measure of the tenacity with which water is held by soils

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

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

Options :

19088953977. 1

19088953978. 2

19088953979. 3

19088953980. 4

Question Number : 61 Question Id : 19088913522 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Water requirement of crop is sum of

- A. Consumptive use
- B. Application Losses
- C. Special Needs
- D. Effective rainfall

Choose the correct answer form the options given below:

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

Options :

- 19088953981. 1
- 19088953982. 2
- 19088953983. 3
- 19088953984. 4

Question Number : 62 Question Id : 19088913523 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Froude's Number is the ratio of

- 1. Inertial force to the viscous force
- 2. Viscous force to the gravitational force
- 3. Inertial force to the gravitational force
- 4. Gravitational force to the hydrostatic force

Options :

- 19088953985. 1

19088953987. 3

19088953988. 4

Question Number : 63 Question Id : 19088913524 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: Flumes are also called as critical flow sections.

Reason R: A critical flow occurs along the length of the flumes.

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

1. A. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. B. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
3. C. **A** is true but **R** is false
4. D. **A** is false but **R** is true

Options :

19088953989. 1

19088953990. 2

19088953991. 3

19088953992. 4

Question Number : 64 Question Id : 19088913525 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The following statements are given with respect to unconfined aquifer.

- A. It is not confined by an upper impermeable layer
- B. Water in this aquifer is at higher than atmospheric pressure
- C. The upper surface of the zone of saturation is known as the water table
- D. The level of water in a well constructed in this aquifer is the level of water table
- E. Artesian wells are observed in this aquifer

Choose the *correct* answer from the options given below

- 1. Only A, B & C are correct
- 2. Only A, C, D are correct
- 3. Only B, C & D are correct
- 4. Only A, C & E are correct

Options :

19088953993. 1

19088953994. 2

19088953995. 3

19088953996. 4

Question Number : 65 Question Id : 19088913526 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A certain amount of sodium chloride is dissolved in 1 litres of water. When the electrical conductivity was measured, it was found to be 10 dS/m. How much sodium chloride was dissolved in water?

- 1. 12.8 gm
- 2. 6.4 gm
- 3. 0.64 gm
- 4. 64 gm

Options :

19088953997. 1

19088953998. 2

Question Number : 66 Question Id : 19088913527 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. Sherman	I. Infiltration rate
B. Darcy's law	II. Spacing of Drains
C. Hooghoudts equation	III. Flow through porous media
D. Green-Ampt equation	IV. Hydrograph
	V. Flood routing

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

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

Options :

19088954001. 1

19088954002. 2

19088954003. 3

19088954004. 4

Question Number : 67 Question Id : 19088913528 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The depth (in centimeters) of water drained off from a given area in 24 hours is known as

1. Watershed
2. Hydrograph
3. Aquifer
4. Drainage design rate

Options :

19088954005. 1

19088954006. 2

19088954007. 3

19088954008. 4

**Question Number : 68 Question Id : 19088913529 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Which of types of greenhouse is specifically meant for hilly areas?

1. Lean to type
2. Uneven span type
3. Saw tooth type
4. Ridge and furrow type

Options :

19088954009. 1

19088954010. 2

19088954011. 3

19088954012. 4

**Question Number : 69 Question Id : 19088913530 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: Anticyclones are high pressure areas.

Reason R: If the size of the raindrop is more than 8 mm, we call it rainfall.

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

Options :

19088954013. 1

19088954014. 2

19088954015. 3

19088954016. 4

Question Number : 70 Question Id : 19088913531 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Consider the following components as part of precision agriculture. Choose the one which does NOT belong to the group.

1. Geographical Positioning System (GPS)
2. Information gathering devices/methodology
3. Decision Support Systems (DSS)
4. Furrow irrigation methods

Options :

19088954017. 1

19088954018. 2

19088954019. 3

19088954020. 4

Part C : Irrigation Water Management Engineering or Irrigation and Drainage Engineering

Section Id :	190889280
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	200
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	190889320
Question Shuffling Allowed :	Yes

Question Number : 71 Question Id : 19088913532 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If an external mouth piece of same diameter is fitted to an orifice, what will happen to the discharge of the mouth piece?

1. Will remain same as that of the orifice.
2. Will increase.
3. Will decrease
4. Will increase first and then will reduce to the discharge of orifice after some time.

Options :

19088954021. 1

19088954022. 2

19088954023. 3

19088954024. 4

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The following statements are made with respect to Matric Potential.

- A. It includes forces associated with adsorption and capillarity.
- B. It is measured in saturated soil
- C. It is measured with tensiometer
- D. It is also known as pressure potential
- E. It is a negative pressure

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

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

Options :

19088954025. 1

19088954026. 2

19088954027. 3

19088954028. 4

Question Number : 73 Question Id : 19088913534 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following could happen when a vertical plane surface is submerged in a liquid?

- A. Center of pressure will be always above the center of gravity of the vertical surface
- B. Center of pressure will be always below the center of gravity of the vertical surface
- C. The distance of the center of pressure from the free surface of liquid is dependent on the specific gravity of the liquid
- D. The distance of center of pressure from free surface of liquid is independent of the specific gravity of the liquid
- E. The distance of center of pressure from free surface of liquid is dependent on the moment of inertia of the surface about an axis passing through CG of the area and parallel to the free surface of liquid

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

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

Options :

19088954029. 1

19088954030. 2

19088954031. 3

19088954032. 4

Question Number : 74 Question Id : 19088913535 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If the stream function exists in a fluid flow and it satisfies the Laplace Equation, which of the below statement is correct?

- 1. It is a possible case of rotational flow
- 2. It is a possible case of irrotational flow
- 3. It can be either rotational or irrotational flow
- 4. It is a possible case of steady flow.

Options :

19088954033. 1

19088954034. 2

19088954035. 3

19088954036. 4

Question Number : 75 Question Id : 19088913536 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The following statements are made with respect to most economical Trapezoidal Channel Section

- A. The top width of the channel is sum of the two sloping sides of the channel
- B. The top width of the channel is equal to the one sloping side of the channel
- C. Hydraulic mean depth is equal to the mean depth of flow
- D. Hydraulic mean depth is equal to the 0.5 times of the mean depth of flow
- E. A semi circle drawn from center of the top width with radius equal to depth of flow will touch the three sides of the channel.

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

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

Options :

19088954037. 1

19088954038. 2

19088954039. 3

19088954040. 4

Question Number : 76 Question Id : 19088913537 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The following statements are made for a channel flow.

- A. For a constant specific energy, the discharge will be maximum when the flow is critical
- B. The minimum specific energy of flow is equal to 1.5 times of the critical depth of flow
- C. The specific force is maximum at critical flow for a constant discharge
- D. Out of the two depths for a constant specific energy, one is sub critical depth and another one is super critical depth
- E. The two depths for a constant specific force is known as alternate depths

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

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

Options :

19088954041. 1

19088954042. 2

19088954043. 3

19088954044. 4

**Question Number : 77 Question Id : 19088913538 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Read the following statements regarding the dynamic similarity between a model and its prototype.

- A. There is similarity of Forces between them
- B. There is similarity of Shape between them
- C. There is similarity of Motion between them
- D. There is similarity of Moment between them

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

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

Options :

19088954045. 1

19088954046. 2

19088954047. 3

19088954048. 4

Question Number : 78 Question Id : 19088913539 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A centrifugal pump is running at a speed of 1000 RPM developing a total head of 1 m and discharging 4 litres per second. How much will be the specific speed of the pump?

- 1. 1000 rpm
- 2. 2000 rpm
- 3. 3000 rpm
- 4. 4000 rpm

Options :

19088954049. 1

19088954050. 2

19088954051. 3

19088954052. 4

Question Number : 79 Question Id : 19088913540 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The following statements are made regarding semi-confined aquifer.

- A. It is partially saturated
- B. It is completely saturated
- C. It is also called as leaky aquifer
- D. It is bounded by non-permeable strata

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

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

Options :

19088954053. 1

19088954054. 2

19088954055. 3

19088954056. 4

Question Number : 80 Question Id : 19088913541 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

19088954057. 1

19088954058. 2

19088954059. 3

19088954060. 4

Question Number : 81 Question Id : 19088913542 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Drawdown distribution curve due to pumping of an aquifer propagate faster in which type of aquifer?

A. Confined aquifer

B. Unconfined aquifer

C. Semiconfined aquifer

D. Perched aquifer

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

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

Options :

19088954061. 1

19088954062. 2

19088954063. 3

19088954064. 4

Question Number : 82 Question Id : 19088913543 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The following sentences are made about Pack Aquifer Ratio.

- A. It is D_{50} of the gravel / D_{50} of the aquifer
- B. It is D_{10} of the gravel / D_{90} of the aquifer
- C. It is used for gravel packing in a tube well
- D. It is used for Tubewell filter Screen design
- E. It is used for open well design

Which of the statements are correct?

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

Options :

19088954065. 1

19088954066. 2

19088954067. 3

19088954068. 4

Question Number : 83 Question Id : 19088913544 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

- 19088954069. 1
- 19088954070. 2
- 19088954071. 3
- 19088954072. 4

Question Number : 84 Question Id : 19088913545 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The Darcian velocity of groundwater flow under the unit hydraulic gradient will be equal to

- 1. Transmissivity
- 2. Specific yield
- 3. Hydraulic conductivity
- 4. Storativity

Options :

- 19088954073. 1
- 19088954074. 2
- 19088954075. 3
- 19088954076. 4

Question Number : 85 Question Id : 19088913546 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Two rectangular tanks of same dimensions are fitted with an orifice at the bottom of each. The diameter of both the orifices are the same. The tank A was emptied at time T min and the Tank B was emptied at Time 2T min.

Which of the Statement below is correct with respect to the initial heights of both the tanks?

- 1. Height of Water in Tank B was 2 times that of Tank A
- 2. Height of Water in Tank B was 4 times that of Tank A
- 3. Height of water in both the tank was same
- 4. Height of water in Tank B was 8 times that of Tank A

Options :

19088954077. 1

19088954078. 2

19088954079. 3

19088954080. 4

Question Number : 86 Question Id : 19088913547 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The permeability of a medium is same in any direction from a point but varies spatially throughout the medium, is known as

1. Homogeneous isotropic
2. Homogeneous anisotropic
3. Heterogeneous isotropic
4. Heterogeneous anisotropic

Options :

19088954081. 1

19088954082. 2

19088954083. 3

19088954084. 4

Question Number : 87 Question Id : 19088913548 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Lysimeter is used for measuring

- A. Evapotranspiration
- B. Evaporation
- C. Irrigation requirement
- D. Water requirement

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

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

Options :

- 19088954085. 1
- 19088954086. 2
- 19088954087. 3
- 19088954088. 4

Question Number : 88 Question Id : 19088913549 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A tank has size of 8mx5mx3m. If the duty of a crop is 100 Hectares-cm, how much area can be irrigated by the tank?

- 1. 100 Ha
- 2. 110 Ha
- 3. 120 Ha
- 4. 150 Ha

Options :

- 19088954089. 1
- 19088954090. 2
- 19088954091. 3
- 19088954092. 4

Question Number : 89 Question Id : 19088913550 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In an experiment, Three saturated soils (Sandy, Loamy and Clay) were subjected to a suction pressure of 2 bar for 24 hours and Volumetric Moisture content (MC) was measured after the experiment. Choose the correct option about the status of MC after the experiment.

1. $MC_{\text{clay}} < MC_{\text{Loam}} < MC_{\text{sand}}$
2. $MC_{\text{clay}} > MC_{\text{Loam}} > MC_{\text{sand}}$
3. $MC_{\text{clay}} < MC_{\text{sand}} < MC_{\text{Loam}}$
4. $MC_{\text{Loam}} < MC_{\text{sand}} < MC_{\text{clay}}$

Options :

19088954093. 1

19088954094. 2

19088954095. 3

19088954096. 4

Question Number : 90 Question Id : 19088913551 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Absorption and desorption of water in a soil does not follow the same path. The difference between these two in a soil is known as

1. Swelling characteristic
2. Hysteresis
3. Sorptivity
4. Transmissivity

Options :

19088954097. 1

19088954098. 2

19088954099. 3

19088954100. 4

Question Number : 91 Question Id : 19088913552 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which statement is INCORRECT about consumptive use coefficient?

1. It is different for different crops.
2. It also varies with crop growth stage
3. It is location specific
4. It is a constant quantity

Options :

19088954101. 1

19088954102. 2

19088954103. 3

19088954104. 4

Question Number : 92 Question Id : 19088913553 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The field capacity of a soil is 25%, its permanent wilting point is 15% and specific dry unit weight is 1.5. If the depth of root zone of a crop is 80 cm, the storage capacity of the soil is

1. 8 cm
2. 10 cm
3. 12 cm
4. 14 cm

Options :

19088954105. 1

19088954106. 2

19088954107. 3

19088954108. 4

Question Number : 93 Question Id : 19088913554 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following approach was adopted for deriving Penman's equation for the estimation of PET?

1. Only Energy balance
2. Only Mass balance
3. Both Energy and Mass Balance
4. It is an empirical formula derived without using any of the approach

Options :

19088954109. 1

19088954110. 2

19088954111. 3

19088954112. 4

Question Number : 94 Question Id : 19088913555 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Intensity of Irrigation is calculated as

1. Gross Irrigated Area / Cultivable Command Area
2. Cultivable Command Area / Gross Irrigated Area
3. Net Irrigated Area / Cultivable Command Area
4. Cultivable Command Area / Net Irrigated Area

Options :

19088954113. 1

19088954114. 2

19088954115. 3

19088954116. 4

Question Number : 95 Question Id : 19088913556 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 : A constant infiltration rate was added to Lewis- Kostiakov equation to get modified Kostiakov equation which gives a better estimation of infiltration rate.

Reason R : The original Lewis-Kostiakov equation used to predict zero infiltration rate after long infiltration time.

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 :

19088954117. 1

19088954118. 2

19088954119. 3

19088954120. 4

Question Number : 96 Question Id : 19088913557 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Consider the following statement/s with respect to response functions of linear systems. Which one *does not* belong to the group?

1. Impulse response function
2. Step response function
3. Pulse response function
4. Reservoir response function

Options :

19088954121. 1

19088954122. 2

19088954123. 3

19088954124. 4

Question Number : 97 Question Id : 19088913558 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Consider the following statement/s about the unit hydrograph

- A. Synthetic unit hydrographs procedure is used to develop unit hydrograph for nearby watersheds of a similar character
- B. Unit hydrograph can be used to find the direct runoff and streamflow hydrographs
- C. While deriving unit hydrograph it is assumed that excess rainfall has a constant intensity within the effective duration
- D. Unit hydrograph is considered unique for a given watershed and invariable with respect to time
- E. Snyder developed a synthetic unit hydrograph for the Himalayan region of India

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

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

Options :

19088954125. 1

19088954126. 2

19088954127. 3

19088954128. 4

Question Number : 98 Question Id : 19088913559 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
Scientist	Formula proposed
A. Mulvaney equation	I. $F(x) = \exp \left[- \exp \left(- \frac{x - u}{\alpha} \right) \right]$
B. Richard's equation	II. $f(t) = f_c + (f_0 - f_c) e^{-kt}$
C. Green and Ampt equation	III. $Q = CiA$
D. Horton equation	IV. $\frac{\partial \theta}{\partial t} = \frac{\partial}{\partial z} \left(d \frac{\partial \theta}{\partial z} + K \right)$
	V. $f(t) = K \left(\frac{\psi \Delta \theta}{F(t)} + 1 \right)$

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

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

Options :

19088954129. 1

19088954130. 2

19088954131. 3

19088954132. 4

Question Number : 99 Question Id : 19088913560 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Consider the following statement/s about the farm ponds

- A. Emergency spillway is provided to take care of unforeseen rainfall excess in the farm pond
- B. Farm ponds are *in-situ* rainwater harvesting structures that are used for storage or recharge and also for irrigation purpose
- C. Dugout and embankment type farm ponds are in use in the farmers' field and drainage line respectively
- D. The capacity of the farm pond is estimated by using Trapezoidal and Simpson's methods
- E. Trapezoidal rule gives the correct capacity calculation than the Simpson's rule

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

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

Options :

19088954133. 1

19088954134. 2

19088954135. 3

19088954136. 4

Question Number : 100 Question Id : 19088913561 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The Muskinghum method of flood routing is a

- 1. Form of reservoir routing method
- 2. Hydrologic channel-routing method
- 3. Complete numerical solution of St Venant equations
- 4. Hydraulic routing method

Options :

19088954137. 1

19088954138. 2

19088954139. 3

19088954140. 4

Question Number : 101 Question Id : 19088913562 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Isochrones are the lines on a basin map that join or connect

1. Points of equal rainfall depth in a pre-determined time interval
2. Points having the equal time of travel of the surface runoff to the outlet
3. Points having equal standard time
4. Raingauge stations with equal rainfall duration

Options :

19088954141. 1

19088954142. 2

19088954143. 3

19088954144. 4

Question Number : 102 Question Id : 19088913563 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Consider the following statements about different type and condition of soils and arrange them in sequence from higher to lower order in terms of constant infiltration rate

- A. Wet clay loam
- B. Dry sandy loam
- C. Dry clay loam
- D. Wet sandy loam
- E. Clay

Choose the *correct* answer from the options given below

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

Options :

19088954145. 1

19088954146. 2

19088954147. 3

19088954148. 4

Question Number : 103 Question Id : 19088913564 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Consider the following statement.

- A. Rating curve is one that is plotted for discharge and gauge height on a graph paper
- B. Rating curves is one which is plotted for discharge and time on a graph paper
- C. Streamflow is not directly measured rather water level is recorded and discharge is deduced by using rating curves
- D. Rating curves are plotted on a graph paper with the cross-sectional area and the velocity of streamflow
- E. Rating curves are the one which is plotted for rainfall intensity and time

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

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

Options :

19088954149. 1

19088954150. 2

19088954151. 3

19088954152. 4

Question Number : 104 Question Id : 19088913565 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Consider the following statements.

- A. Soils of heavy texture are less salinized than those of light-textured soils
- B. Hydrological conditions contribute substantially to the development of soil salinity and alkalinity
- C. Soil salinity can be due to the use of poor quality irrigation water
- D. Salt problems in irrigated areas are due to rainfall and depth of water table
- E. Soils which are located in high rainfall areas are generally saline in nature

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

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

Options :

19088954153. 1

19088954154. 2

19088954155. 3

19088954156. 4

**Question Number : 105 Question Id : 19088913566 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Consider the following statements.

- A. Saline water can more safely be used in coarse than in fine-textured soils
- B. Sodicity problem of medium-textured with kankar layer soils can be managed by deep ploughing
- C. Dhaincha can be used for increasing the infiltration rate of the sodic soils
- D. Application of gypsum under conditions of the lower water table from ground surface improves land productivity
- E. Heavy textured soils should have larger drain spacing for draining excess water

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

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

Options :

19088954157. 1

19088954158. 2

19088954159. 3

19088954160. 4

**Question Number : 106 Question Id : 19088913567 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Consider the following statements:

- A. The total concentration of salts in soil is more effective in reducing the plant's development rather than the chemical nature of the salts
- B. There exists an inverse relationship between osmotic pressure and plant growth
- C. Where the soil is slowly permeable for reclamation of salt-affected soils, it is better to take up any crops
- D. Water table in pre and post-monsoon season below 3 metre is considered a safe area from waterlogging
- E. Under steady-state conditions the water table position does not change as long as the recharge continues

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

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

Options :

19088954161. 1

19088954162. 2

19088954163. 3

19088954164. 4

Question Number : 107 Question Id : 19088913568 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The drainage coefficient of land is 10 mm. Calculate the capacity required at the outlet end of the drainage ditch draining a watershed of 300 hectares.

- 1. 0.35
- 2. 0.5
- 3. 1
- 4. 1.5

Options :

19088954165. 1

19088954167. 3

19088954168. 4

Question Number : 108 Question Id : 19088913569 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. Hooghoudt equation for drain above an impervious layer	I. $h = q \left(\frac{D_v}{K_t} + \frac{L^2}{8K_b} + \frac{L}{\pi K_b} \ln \frac{D_r}{u} \right)$
B. Hooghoudt equation for the drain on top of impervious layer	II. $q = \frac{4K(H^2 - D^2)}{L^2}$
C. Ernst equation when the drain is in the bottom of the layer	III. $q = \frac{8K dh + 4 Kh^2}{L^2}$
D. Ernst equation when the drain is in the top of the layer	IV. $h = q \left(\frac{D_v}{K_t} + \frac{L^2}{8(D_b K_b + K_t D_t)} + \frac{L}{\pi K_t} \ln \frac{a D_r}{u} \right)$
	V. $q = -K_i A$

Choose the correct answer from the options given below:

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

Options :

19088954169. 1

19088954170. 2

19088954171. 3

19088954172. 4

Question Number : 109 Question Id : 19088913570 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. Waterlogged area	I. Water table within 1m bgl in post-monsoon
B. Critical area for waterlogging	II. Water table between 1-2 m bgl in post-monsoon
C. Potential area for waterlogging	III. Water table between 3 to 5 m bgl during pre-monsoon
D. Safe area from waterlogging	IV. Water table below 3 m bgl from land surface any season
	V. Water table below 6 m bgl from land surface any season

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

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

Options :

19088954173. 1

19088954174. 2

19088954175. 3

19088954176. 4

Question Number : 110 Question Id : 19088913571 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Consider the following statement/s regarding the energy balance and its various components

- A. Heat transfer by Cladding material
- B. Heat transfer by conduction through the greenhouse hull
- C. Condensation against the hull
- D. Air exchange by infiltration and ventilation
- E. Crop evaporation and evaporation from other surfaces

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

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

Options :

19088954177. 1

19088954178. 2

19088954179. 3

19088954180. 4

Question Number : 111 Question Id : 19088913572 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

19088954181. 1

19088954182. 2

19088954183. 3

19088954184. 4

**Question Number : 112 Question Id : 19088913573 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Consider the following statements about the functions of the hydroponic system of cultivation

- A. It should provide temperature control.
- B. Reduce water loss by evaporation.
- C. Reduce disease and pest infestation.
- D. It should protect crops against the elements of weather, such as wind and rain.
- E. it utilizes minimal land area.

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

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

Options :

19088954185. 1

19088954186. 2

19088954187. 3

19088954188. 4

**Question Number : 113 Question Id : 19088913574 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Arrange the following in order of their wavelengths (Lower to higher) in the electromagnetic spectrum

- A. Near-infrared radiation
- B. Thermal infrared radiation
- C. Microwave radiations
- D. Radiowaves
- E. Visible spectrum

Choose the *correct* answer from the options given below

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

Options :

19088954189. 1

19088954190. 2

19088954191. 3

19088954192. 4

Question Number : 114 Question Id : 19088913575 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Arrange the following in sequence regarding the irrigation systems design components for landscaping

- A. Water source
- B. Cyclone separator
- C. Mainline
- D. Pop up/Sprinkler
- E. Fertigation unit

Choose the *correct* answer from the options given below

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

Options :

- 19088954193. 1
- 19088954194. 2
- 19088954195. 3
- 19088954196. 4

Question Number : 115 Question Id : 19088913576 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: The rate of air removal from the greenhouse must increase as the elevation of the greenhouse site increases above mean sea level.

Reason R: The rate of air removal does not depend upon the light intensity in the greenhouse.

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

Options :

- 19088954197. 1
- 19088954198. 2
- 19088954199. 3
- 19088954200. 4

Question Number : 116 Question Id : 19088913577 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: In the case of precision agriculture, it is necessary to analyze required data in a grid manner.

Reason R: India is a country where a large number of farmers are small and marginal hence, random sampling will be the appropriate method for data analysis.

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

Options :

19088954201. 1

19088954202. 2

19088954203. 3

19088954204. 4

Question Number : 117 Question Id : 19088913578 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following statements regarding the EMR spectrum is INCORRECT?

1. Shorter the wavelength higher the energy
2. Shorter the wave length higher the frequency
3. Higher the wavelength lesser the energy
4. Higher the wavelength, higher the energy and higher the frequency

Options :

19088954205. 1

19088954206. 2

19088954207. 3

19088954208. 4

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements

Statement I: Precision water management approaches include variable rate irrigation, soil-landscape management, and drainage.

Statement II: Remote sensing combined with GIS and GPS can help in site-specific resources management.

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 :

19088954209. 1

19088954210. 2

19088954211. 3

19088954212. 4

Question Number : 119 Question Id : 19088913580 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Gases responsible for the absorption or attenuation of EMR in the atmosphere are

1. CO, CO₂, H₂O, CH₄
2. CO₂, H₂O, O₃
3. CO₂, H₂O, CH₄, O₃
4. CO, CO₂, H₂O, O₃

Options :

19088954213. 1

19088954214. 2

19088954215. 3

19088954216. 4

Question Number : 120 Question Id : 19088913581 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements

Statement I: Geostationary satellites orbit at an altitude of 700 km from the earth.

Statement II: IRS satellites are earth-orbiting satellites and they capture information from the entire globe.

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 :

19088954217. 1

19088954218. 2

19088954219. 3

19088954220. 4