Water Science and Technology ICAR SEPT 2022

Topic:- 20 Water Science and Technology_PG

1) Which of the following raingauges gives data on intensity of rainfall?

[Question ID = 1921][Question Description = 101_18_WST_AUG22_Q01]
1. Tipping bucket [Option ID = 7681]
2. Weighing bucket [Option ID = 7682]
3. Syphon type [Option ID = 7683]
4. Symon's gauge [Option ID = 7684]

2) In which of the following states, watershed development projects with the assistance of department of International Development, United Kingdom was not implemented?

[Question ID = 1922][Question Description = 102_18_WST_AUG22_Q02]
1. Karnataka [Option ID = 7685]
2. Kerala [Option ID = 7686]
3. Andhra Pradesh [Option ID = 7687]
4. Odisha [Option ID = 7688]

3) As per Indian Standard IS 4987-1968 code the number of raingauges to be provided for 1000 km^2 hilly area with heavy rainfall are

[Question ID = 1923][Question Description = 103_18_WST_AUG22_Q03]
1. 2 [Option ID = 7689]
2. 4 [Option ID = 7690]
3. 8 [Option ID = 7691]
4. 10 [Option ID = 7692]

4) Match List I with List II

List I	List II
Govt programme	Launched/ commenced on
A. Jal Shakti Abhiyan	I. June, 2015
B. Catch the rain	II. March, 2021
C. AMRUT-1	III. January, 2016
D. Sustainable development goal	IV. July 2019
E. Amrit Sarovar	V. April, 2022

Choose the correct answer from the options given below:

[Question ID = 1924][Question Description = 104_18_WST_AUG22_Q04]
1. A - II, B - IV, C - V, D - III, E - I [Option ID = 7693]
2. A - II, B - V, C - III, D - I, E - IV [Option ID = 7694]
3. A - III, B - IV, C - V, D - I, E - II [Option ID = 7695]
4. A - IV, B - II, C - I, D - III, E - V [Option ID = 7696]

5) The bio-industrial watershed concept was given by [Question ID = 1925][Question Description = 105_18_WST_AUG22_Q05]
1. Prof. M. S. Swaminathan [Option ID = 7697]
2. Prof. J. S. Bali [Option ID = 7698]
3. Prof. K Subramanya [Option ID = 7699]
4. Prof. H. H. Bennett [Option ID = 7700]

6) If the width of the approach channel is 5 m and head over a Cipolletti weir is 1 cm, then discharge over it will be

[Question ID = 1926][Question Description = 106_18_WST_AUG22_Q06]
1. 0.192 lps [Option ID = 7701]
2. 1.92 lps [Option ID = 7702]
3. 0.093 lps [Option ID = 7703]
4. 9.3 lps [Option ID = 7704]

7) Runoff plots are isolated areas of commonly used size in hectares [Question ID = 1927][Question Description =

107_18_WST_AUG22_Q07]
1. 1/100 to 1/50 [Option ID = 7705]
2. 1/125 to 1/100 [Option ID = 7706]
3. 1/250 to 1/125 [Option ID = 7707]
4. 1/500 to 1/250 [Option ID = 7708]

8) Which of the following intruments are used to measure cumulative flow of water?

A. Propeller meter

B. Elbow meter

C. Deathridge meter

D. Water meter

Choose the *correct* answer from the options given below

[Question ID = 1928][Question Description = 108_18_WST_AUG22_Q08]
1. A and B only [Option ID = 7709]
2. C and D only [Option ID = 7710]
3. B, C and D only [Option ID = 7711]
4. A, C and D only [Option ID = 7712]

9) In case of prismoidal rule of determining the capacity of pond followings are used

A. The number of contours should be odd

B. The number of contour intervals should be odd

C. The number of contours should be even

D. The number of contour intervals should be even

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

[Question ID = 1929][Question Description = 109_18_WST_AUG22_Q09]
1. A and B only

   [Option ID = 7713]
2. A and D only

   [Option ID = 7714]
3. B and C only

   [Option ID = 7715]
4. C and D only

   [Option ID = 7716]

10) Which of the following are good foundation materials for embankments?

A. Gravel-Sand-Silt mixture

B. Sand-Silt mixture

C. Silt-Clay mixture

D. Sand-Clay mixture

Choose the *correct* answer from the options given below

[Question ID = 1930][Question Description = 110_18_WST_AUG22_Q10]
1. A and B only [Option ID = 7717]
2. A, B and C only [Option ID = 7718]
3. A, B and D only [Option ID = 7719]
4. B, C and D only [Option ID = 7720]

11) The average monsoonal rainfall of India is

[Question ID = 1931][Question Description = 111_18_WST_AUG22_Q11]
1. 400 M ha-m [Option ID = 7721]
2. 119 M ha-m [Option ID = 7722]
3. 180 M ha-m [Option ID = 7723]
4. 300 M ha-m [Option ID = 7724]

12) The second largest river basin in India is[Question ID = 1932][Question Description = 112_18_WST_AUG22_Q12]
1. Ganga-Brahamputra-Meghna [Option ID = 7725]
2. Narmada [Option ID = 7726]
3. Godavari [Option ID = 7727]
4. Mahanadi [Option ID = 7728]

13) The largest number of major irrigation projects completed before the commencement of 5 years plan

[Question ID = 1933][Question Description = 113_18_WST_AUG22_Q13]
1. Uttar Pradesh> Andhra Pradesh > Tamil Nadu > Madhya Pradesh [Option ID = 7729]
2. Tamil Nadu > Uttar Pradesh > Andhra Pradesh > Madhya Pradesh [Option ID = 7730]
3. Andhra Pradesh >Madhya Pradesh > Uttar Pradesh > Tamil Nadu [Option ID = 7731]
4. Madhya Pradesh >Andhra Pradesh > Uttar Pradesh > Tamil Nadu [Option ID = 7732]

14) Which of the following are the major diversion works completed during the period 1836 to 1866?

A. Upper Ganga Canal

B. Mutha Canal

C. Upper Bari-Doab Canal

D. Krishna Delta

Choose the *correct* answer from the options given below

[Question ID = 1934][Question Description = 114_18_WST_AUG22_Q14]
1. A, B and D only [Option ID = 7733]
2. B, C and D only [Option ID = 7734]
3. A, C and D only [Option ID = 7735]
4. A, B and C only [Option ID = 7736]

15) In warabandi system the time allotted for unit area in paddy of 10 hectare, sugarcane 10 ha and 8 hectrae of maize will be[Question ID = 1935][Question Description = 115_18_WST_AUG22_Q15]
1. 1.75 hours [Option ID = 7737]
2. 42 hours [Option ID = 7738]
3. 6 hours [Option ID = 7739]
4. 28 hours [Option ID = 7740]

16) Match List I with List II

List I	List II
Crop	Chromosomes number (2N)
A. Barley	I. 24
B. Chickpea	II. 40
C. Soybean	III. 20
D. Maize	IV. 16
E. Rice	V. 14

[Question ID = 1936][Question Description = 116_18_WST_AUG22_Q16]
1. A-V, B-IV, C-II, D-III, E-I [Option ID = 7741]
2. A-V, B-I, C-IV, D-III, E-II [Option ID = 7742]
3. A-I, B-IV, C-III, D-V, E-II [Option ID = 7743]
4. A-III, B-II, C-I, D-IV, E-V [Option ID = 7744]

17) Which of the following are true about nitrogen nutrition in plant?

A. Nitrogen is the constituent of chlorophyll, amino-acids, protein, RNA and DNA.

B. Nitrogen deficiency symptoms appears first on the new leaves.

C. Excess nitrogen advances maturity of crops.

D. In nitrogen, deficiency symptoms first appears on the tip of the leaf.

E. In plant, nitrogen translocated from older leaves to new leaves.

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

[Question ID = 1937][Question Description = 117_18_WST_AUG22_Q17]
1. A, B and D only

[Option ID = 7745]

2. A, B and E only

[Option ID = 7746]

3. B, C and D only

[Option ID = 7747]

4. A, D and E only

[Option ID = 7748]

18) Which of the following is NOT true about phosphorus nutrition in plant?

[Question ID = 1938][Question Description = 118_18_WST_AUG22_Q18]

1. Phosphorus is not a constituent of nucleoproteins. [Option ID = 7749]
2. Phosphorus plays important role in transfer of energy in plant. [Option ID = 7750]
3. Large part of phosphorus is absorbed by plants in the form of dihydrogen orthophosphate. [Option ID = 7751]
4. Deficiency symptoms of phosphorus in plants first appear on the older leaves. [Option ID = 7752]

19) Given below are two statements

Statement I: According to Willcox's agrobiology, amount of nitrogen absorbed by all kind of plant is 318 pounds/acre in single crop cycle.

Statement II: Willcox's inverse yield nitrogen law still hold good.

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

[Question ID = 1939][Question Description = 119_18_WST_AUG22_Q19]

1. Both Statement I and Statement II are true [Option ID = 7753]
2. Both Statement I and Statement II are false [Option ID = 7754]
3. Statement I is true but Statement II is false [Option ID = 7755]
4. Statement I is false but Statement II is true [Option ID = 7756]

20) Aflatoxin toxin in groundnut is produced by _____ fungi.

[Question ID = 1940][Question Description = 120_18_WST_AUG22_Q20]

1. *Phytopthora spp.* [Option ID = 7757]
2. *Agrotis ispilon* [Option ID = 7758]
3. *Fusarium spp.* [Option ID = 7759]
4. *Aspergillus flavus* [Option ID = 7760]

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

Assertion A: In conservation agriculture, cost of cultivation, time of tillage operation and soil compaction is more over conventional agriculture.

Reason R: Crop diversification, minimum soil disturbance and crop residue cover are pillars of conservation agriculture.

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

[Question ID = 1941][Question Description = 121_18_WST_AUG22_Q21]

1. Both A and R are correct and R is the correct explanation of A [Option ID = 7761]
2. Both A and R are correct but R is NOT the correct explanation of A [Option ID = 7762]
3. A is correct but R is not correct [Option ID = 7763]
4. A is not correct but R is correct [Option ID = 7764]

22) Match List I with List II

List I	List II
Crops	Term associated with
A. Wheat	I. Siliquae
B. Chickpea	II. Geotropism
C. Groundnut	III. Arrow
D. Sugarcane	IV. Kabuli type
E. Rapeseed-mustard	V. Spike

Choose the correct answer from the options given below:

[Question ID = 1942][Question Description = 122_18_WST_AUG22_Q22]

1. A - I, B - III, C - IV, D - V, E - II [Option ID = 7765]
2. A - III, B - I, C - IV, D - II, E - V [Option ID = 7766]

3. A - II, B - IV, C - V, D - III, E - I [Option ID = 7767]
4. A - V, B - IV, C - II, D - III, E - I [Option ID = 7768]

23) Which of the following soils is locally known as KALLAR?

[Question ID = 1943][Question Description = 123_18_WST_AUG22_Q23]
1. Black soils [Option ID = 7769]
2. Sodic soils [Option ID = 7770]
3. Saline soils [Option ID = 7771]
4. Saline-sodic soils [Option ID = 7772]

24) Which of the following is the primary mineral of soils?[Question ID = 1944][Question Description = 124_18_WST_AUG22_Q24]
1. Silicon [Option ID = 7773]
2. Alumina [Option ID = 7774]
3. Oxides of iron [Option ID = 7775]
4. Feldspars [Option ID = 7776]

25) Arrange the given below orders of soils (as per ICAR classification), in a sequence of increasing area under them

A. Vertisols

B. Ultisols

C. Alfisols

D. Inceptisols

E. Entisols

Choose the *correct* answer from the options given below

[Question ID = 1945][Question Description = 125_18_WST_AUG22_Q25]
1. E, B, C, D, A [Option ID = 7777]
2. B, E, C, A, D [Option ID = 7778]
3. B, A, C, E, D [Option ID = 7779]
4. E, C, D, B, A [Option ID = 7780]

26) Which of the following is known as power house of the cell?

[Question ID = 1946][Question Description = 126_18_WST_AUG22_Q26]
1. Nuclei [Option ID = 7781]
2. Chloroplasts [Option ID = 7782]
3. Ribosomes [Option ID = 7783]
4. Mitochondria [Option ID = 7784]

27) Which of the following plants DOES NOT has Krantz anatomy in their leaves?

[Question ID = 1947][Question Description = 127_18_WST_AUG22_Q27]
1. Sugarcane [Option ID = 7785]
2. Maize [Option ID = 7786]
3. Sorghum [Option ID = 7787]
4. Wheat [Option ID = 7788]

28) At present concentration of CO_2 in the atmosphere is about _____

[Question ID = 1948][Question Description = 128_18_WST_AUG22_Q28]
1. 280 ppm [Option ID = 7789]
2. 400 ppm [Option ID = 7790]
3. 300 ppm [Option ID = 7791]
4. 290 ppm [Option ID = 7792]

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

Assertion A: Increase in temperature increases the transpirational rate in plant.

Reason R: Increase in temperature lower the relative humidity and widen the opening of stomata.

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

[Question ID = 1949][Question Description = 129_18_WST_AUG22_Q29]
1. Both **A** and **R** are correct and **R** is the correct explanation of **A** [Option ID = 7793]

2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A** [Option ID = 7794]
3. **A** is correct but **R** is not correct [Option ID = 7795]
4. **A** is not correct but **R** is correct [Option ID = 7796]

30) Net gain of ATP molecules in complete aerobic breakdown of one molecule of glucose in most eukaryotes is _____.

[Question ID = 1950][Question Description = 130_18_WST_AUG22_Q30]
1. 38 [Option ID = 7797]
2. 40 [Option ID = 7798]
3. 34 [Option ID = 7799]
4. 36 [Option ID = 7800]

31) Which of the following is NOT called a sugar?

[Question ID = 1951][Question Description = 131_18_WST_AUG22_Q31]
1. Starch [Option ID = 7801]
2. Glucose [Option ID = 7802]
3. Ribose [Option ID = 7803]
4. Sucrose [Option ID = 7804]

32) Match List I with List II

List I	List II
Crops	Associated pests/disease
A. Rice	I. Karnal bunt
B. Chickpea	II. Brown plant hopper
C. Groundnut	III. Stem borer
D. Maize	IV. Pod borer
E. Wheat	V. White grub

Choose the correct answer from the options given below:

[Question ID = 1952][Question Description = 132_18_WST_AUG22_Q32]
1. A - IV , B - V , C - III , D - I , E - II [Option ID = 7805]
2. A - II , B - I , C - III , D -V , E - IV [Option ID = 7806]
3. A - II , B - IV , C - V , D - III , E - I [Option ID = 7807]
4. A - I , B - V, C - III, D - II , E - IV [Option ID = 7808]

33) Which of the following statements are correct?

A. NFSM was launched in 2007-08

B. ATMA related with certified seed production

C. FASAL deals with forecasting of agriculture output

D. Pulse mission is not a part of NFSM

E. SHC contain analysis of 12 soil health parameters

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

[Question ID = 1953][Question Description = 133_18_WST_AUG22_Q33]
1. A, B and D only

   [Option ID = 7809]
2. B, D and E only

   [Option ID = 7810]
3. A, D and E only

   [Option ID = 7811]
4. A, C and E only

   [Option ID = 7812]

34) Arrange the following ICAR Institutes in order of their location from South to North in India

A. Central Research Institue of Dryland Agriculture

B. Central Potato Research Institute

C. Indian Institute of Agricultural Economics and Policy Research

D. Indian Institute of Soil Science

E. Central Tuber Crops Research Institute

Choose the *correct* answer from the options given below

[Question ID = 1954][Question Description = 134_18_WST_AUG22_Q34]
1. A, B, E, D, C [Option ID = 7813]
2. E, A, D, B, C [Option ID = 7814]
3. E, A, D, C, B [Option ID = 7815]
4. B, A, E, D, C [Option ID = 7816]

35) Which of the following ICAR - Institute are located at Karnal, Haryana?

A. Central Soil Salinity Research Institute

B. Indian Institute of Soil Science

C. Indian Institute of Maize Research

D. Indian Institute of Wheat and Barley Research

E. National Dairy Research Institute

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

[Question ID = 1955][Question Description = 135_18_WST_AUG22_Q35]
1. A, B and D only [Option ID = 7817]
2. A, D and E only [Option ID = 7818]
3. A, B and E only [Option ID = 7819]
4. B, C and D only [Option ID = 7820]

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

Assertion A : The imbalance of air and water in the root zone causes adverse effects on crop growth due to waterlogging and salt accumulation.

Reason R : The physical condition of the soil deteriorates due to excess soluble salts and salinity in the crop root zone.

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

[Question ID = 1956][Question Description = 136_18_WST_AUG22_Q36]
1. Both **A** and **R** are true and **R** is the correct explanation of **A** [Option ID = 7821]
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A** [Option ID = 7822]
3. **A** is true but **R** is false [Option ID = 7823]
4. **A** is false but **R** is true [Option ID = 7824]

37) Given below are two statements

Statement I: Subsurface drainage increases the moisture available to the plants, because the root zone is deepened.

Statement II: Subsurface drainage decreases the volume of soil from which roots can take food.

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

[Question ID = 1957][Question Description = 137_18_WST_AUG22_Q37]
1. Both Statement I and Statement II are correct [Option ID = 7825]
2. Both Statement I and Statement II are incorrect [Option ID = 7826]
3. Statement I is correct but Statement II is incorrect [Option ID = 7827]
4. Statement I is incorrect but Statement II is correct [Option ID = 7828]

38) Match List I with List II

List I	List II
Pump	Pumps Characteristics
A. Specific speed	I. Large discharge
B. Axial flow impellers	II. Small discharge
C. Radial flow impellers	III. Vapour filled cavities
D. Cavitation	IV. Dimensional analysis
E. Shape of head discharge curve	V. Performance curve

Choose the correct answer from the options given below:

[Question ID = 1958][Question Description = 138_18_WST_AUG22_Q38]

1. A -IV , B -I , C -II , D -III , E -V [Option ID = 7829]
2. A -IV , B -II , C -I , D -III , E -V [Option ID = 7830]
3. A -V , B -I , C -II , D -III, E -IV [Option ID = 7831]
4. A - IV , B -I , C -II , D -V , E -III [Option ID = 7832]

39) Match List I with List II

List I	List II
Water lifting devices	Water lifting devices / Situations
A. Persian wheel	I. Unlined wells
B. Denkli	II. Lined wells
C. Churus	III. Depth of well is 12 to 20 m
D. Centrifugal pump	IV. Positive displacement pump
E. Hand Pump	V. Discharge varies directly as speed

Choose the correct answer from the options given below:

[Question ID = 1959][Question Description = 139_18_WST_AUG22_Q39]
1. A -III , B -I , C -II , D -V , E -IV [Option ID = 7833]
2. A -II , B -I , C -III , D -IV , E -V [Option ID = 7834]
3. A -III , B -I , C -II , D -IV , E -V [Option ID = 7835]
4. A -IV , B -I , C -II , D -V , E -III [Option ID = 7836]

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

Assertion A : Increasing volumetric price causes substitution of surface water with groundwater.

Reason R : Area-based pricing method does not promote the use of groundwater.

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

[Question ID = 1960][Question Description = 140_18_WST_AUG22_Q40]
1. Both **A** and **R** are true and **R** is the correct explanation of **A** [Option ID = 7837]
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A** [Option ID = 7838]
3. **A** is true but **R** is false [Option ID = 7839]
4. **A** is false but **R** is true [Option ID = 7840]

41) Objectives of irrigation water charging are

[Question ID = 1961][Question Description = 141_18_WST_AUG22_Q41]
1. Service delivery-cost and accountability [Option ID = 7841]
2. Demand management, water allocation and pollution control [Option ID = 7842]
3. Social objectives [Option ID = 7843]
4. Service delivery-cost and accountability, demand management, water allocation and pollution control, Social objectives [Option ID = 7844]

42) The construction process of subsurface pipe drainage system is in which sequence?

A. Outlet construction

B. Grade control

C. Setting out alignments and levels

D. Excavating the trenches

E. Placing the envelopes

F. Placing the drain pipes

Choose the *correct* sequence from the options given below

[Question ID = 1962][Question Description = 142_18_WST_AUG22_Q42]
1. A, C, B, D, F, E [Option ID = 7845]
2. A, B, C, D, E, F [Option ID = 7846]
3. C, B, D, E, F, A [Option ID = 7847]
4. C, B, D, F, E, A [Option ID = 7848]

43) Hydraulic Ram is a water lifting device that uses the

[Question ID = 1963][Question Description = 143_18_WST_AUG22_Q43]
1. Dynamic pressure of water to lift water from low head to high head. [Option ID = 7849]
2. Dynamic pressure of water to lift water from high head to low head. [Option ID = 7850]
3. Static pressure of water to lift portion of water from high head to low head. [Option ID = 7851]

4. Static pressure of water to lift portion of water from low head to high head. [Option ID = 7852]

44) In an area of 100 hectares, maize and wheat crops are grown which can tolerate 8 m mhos conductivity in the drainage water. Yearly consumptive use of crop is 200 cm and yearly rainfall is 100 cm. The conductivity of irrigation water is 2 m mhos. Calculate the water requirement for the year.

[Question ID = 1964][Question Description = 144_18_WST_AUG22_Q44]
1. 133.33 cm [Option ID = 7853]
2. 33.33 cm [Option ID = 7854]
3. 13.33 cm [Option ID = 7855]
4. 3.33 cm [Option ID = 7856]

45) Given below are two statements

Statement I: Volumetric method of pricing can be efficiently used in tubewell irrigation.

Statement II: Volumetric method of pricing is not in practice in India.

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

[Question ID = 1965][Question Description = 145_18_WST_AUG22_Q45]
1. Both Statement I and Statement II are correct

   [Option ID = 7857]
2. Both Statement I and Statement II are incorrect

   [Option ID = 7858]
3. Statement I is correct but Statement II is incorrect

   [Option ID = 7859]
4. Statement I is incorrect but Statement II is correct

   [Option ID = 7860]

46) Match List I with List II

List I	List II
Drainage	Drainage / Situations
A. Vertical drainage	I. Hydraulic conductivity
B. Water absorption test	II. Coconut fibre
C. Inverse auger hole	III. Random System
D. Organic envelope material	IV. Clay pipes
E. To drain scattered depressions/potholes	V. Shallow/deep tube wells

Choose the correct answer from the options given below:

[Question ID = 1966][Question Description = 146_18_WST_AUG22_Q46]
1. A - IV, B - II, C - V , D - I, E - III [Option ID = 7861]
2. A - I , B - II , C - V, D - III, E - IV [Option ID = 7862]
3. A - V , B - IV , C - I, D - II, E - III [Option ID = 7863]
4. A - V, B - IV , C -I , D - III, E - II [Option ID = 7864]

47) Soil salinity adversely affects plant growth. Arrange the below statements in correct sequence for occurance of soil salinity in irrigated fields..

A. When area is irrigated excessively over an extended period of time, the ground water level rises.

B. Salts which were orginally present in the irrigation water are thus concentrated on the land surface.

C.When it reaches a height which is equal to the capillary rise of moisture in the soil, the soil moisture is brought to the surface.

D. Soil moisture evaporates leaving the salts at the surface.

Choose the *correct* answer from the options given below

[Question ID = 1967][Question Description = 147_18_WST_AUG22_Q47]
1. A, D, B, C [Option ID = 7865]
2. A, C, D, B [Option ID = 7866]
3. A, B, C, D [Option ID = 7867]
4. A, D, C, B [Option ID = 7868]

48) Type of land requiring drainage

A. Land having water table high

B. Water logging lands

C. Excessive moisture content below the field capacity

D. Humid regions having continous high rainfall continuous

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

[Question ID = 1968][Question Description = 148_18_WST_AUG22_Q48]
1. A, B and D only [Option ID = 7869]
2. A and B only [Option ID = 7870]
3. A, B and C only [Option ID = 7871]
4. A and C only [Option ID = 7872]

49) A hydraulic ram operates at a drive head of 3 m and a delivery head of 20 m. The flow through the drive pipe is 0.6 m^3/min and the discharge at the outlet of the delivery pipe is 0.07 m^3/min. Compute the efficiency of the ram adopting Rankine's formula.

[Question ID = 1969][Question Description = 149_18_WST_AUG22_Q49]
1. 74.8 % [Option ID = 7873]
2. 77.3 % [Option ID = 7874]
3. 80.0 % [Option ID = 7875]
4. 72.8 % [Option ID = 7876]

50) Given below are two statements

Statement I: In pumping test, the water level in the well is depressed to an amount equal to the safe working head for the subsoil.

Statement II: In the recuperation test, the water level in the well is depressed by an amount less than the safe working head for the subsoil.

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

[Question ID = 1970][Question Description = 150_18_WST_AUG22_Q50]
1. Both Statement I and Statement II are true [Option ID = 7877]
2. Both Statement I and Statement II are false [Option ID = 7878]
3. Statement I is true but Statement II is false [Option ID = 7879]
4. Statement I is false but Statement II is true [Option ID = 7880]

51) Optimum yield of a well is arrived at by conducting a "step drawdown test" in the well. Arrange the steps in sequence for conducting a "step drawdown test" from the below statements.

A. Bore is first pumped at a very low and constant discharge rate for a fixed period of time in such a manner that the water level stabilizes at a shallow depth.

B. The pump discharge is then increased to a medium rate of pumping so that water level falls further down but eventually stabilized at an intermediate depth.

C. The pump discharge is further increased higher so that the water level again stabilizes at a lower level further down.

D. When the discharge versus steady state drawdown of the different steps is plotted, a parabolic curve is obtained.

Choose the *correct* answer from the options given below

[Question ID = 1971][Question Description = 151_18_WST_AUG22_Q51]
1. C, B, A, D [Option ID = 7881]
2. A, B, D, C [Option ID = 7882]
3. A, B, C, D [Option ID = 7883]
4. C, A, B, D [Option ID = 7884]

52) Nodal agency of Pradhan Mantri Krishi Sinchai Yojana is

[Question ID = 1972][Question Description = 152_18_WST_AUG22_Q52]
1. Central Government [Option ID = 7885]
2. Horticulture Department [Option ID = 7886]
3. State Agriculture Department [Option ID = 7887]
4. Prime Minister [Option ID = 7888]

53) A drainage canal discharges 0.2 cubic metres of water per second in a day and drains 250 hectares. Calculate the

capacity required at the outlet end of the drainage ditch draining a watershed of 300 hectares.

[Question ID = 1973][Question Description = 153_18_WST_AUG22_Q53]
1. 0.243 cubic metre per second [Option ID = 7889]
2. 0.243 cubic metre per hour [Option ID = 7890]
3. 0.347 cubic metre per second [Option ID = 7891]
4. 0.243 cubic cm per second [Option ID = 7892]

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

Assertion A : The power of a pump which raises 100 kg of water in 10 sec to a height of 100 m is 10 KW

Reason R : The practical unit of power is horse power

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

[Question ID = 1974][Question Description = 154_18_WST_AUG22_Q54]
1. Both **A** and **R** are true and **R** is the correct explanation of **A** [Option ID = 7893]
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A** [Option ID = 7894]
3. **A** is true but **R** is false [Option ID = 7895]
4. **A** is false but **R** is true [Option ID = 7896]

55) Power to be supplied by prime mover with 100 % drive efficiency

A. Brake Horsepower = Shaft horsepower

B. Water horsepower = Shaft horsepower

C. Water horsepower/pump efficiency = Shaft horsepower

D. Input horsepower = Shaft horsepower

E. Horsepower = Shaft horsepower

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

[Question ID = 1975][Question Description = 155_18_WST_AUG22_Q55]
1. B and C only [Option ID = 7897]
2. A and C only [Option ID = 7898]
3. A and D only [Option ID = 7899]
4. C and E only [Option ID = 7900]

56) Given below are two statements

Statement I: For radial flow impellers, brake power (BP) generally increases from a non-zero value to a peak and then declines slightly as discharge (Q) increases from zero.

Statement II: For mixed flow impellers, brake power (BP) increases steadily from a non-zero value as discharge (Q) increases.

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

[Question ID = 1976][Question Description = 156_18_WST_AUG22_Q56]
1. Both Statement I and Statement II are true

   [Option ID = 7901]
2. Both Statement I and Statement II are false

   [Option ID = 7902]
3. Statement I is true but Statement II is false

   [Option ID = 7903]
4. Statement I is false but Statement II is true

   [Option ID = 7904]

57) A subset of the sample space associated with a random experiment, is called an

[Question ID = 1977][Question Description = 157_18_WST_AUG22_Q57]
1. Event [Option ID = 7905]
2. Probability [Option ID = 7906]
3. Sample Space [Option ID = 7907]
4. Determinant [Option ID = 7908]

58) For mid values of 30, 38, 48, 57 and 66, the second class of distribution is

[Question ID = 1978][Question Description = 158_18_WST_AUG22_Q58]
1. 38.6 - 57 [Option ID = 7909]
2. 34 - 43 [Option ID = 7910]
3. 52.5 - 61.5 [Option ID = 7911]
4. 34 - 61.5 [Option ID = 7912]

59) The range of given data 9, 13, 15, 17, 19, 21, 28, 8, 34 is

[Question ID = 1979][Question Description = 159_18_WST_AUG22_Q59]
1. 28 [Option ID = 7913]
2. 26 [Option ID = 7914]
3. 25 [Option ID = 7915]
4. 32 [Option ID = 7916]

60) If coefficient of variation is 100, the mean of the data is 25, the standard deviation[Question ID = 1980][Question Description = 160_18_WST_AUG22_Q60]
1. 20 [Option ID = 7917]
2. 25 [Option ID = 7918]
3. 5 [Option ID = 7919]
4. 10 [Option ID = 7920]

61) Given below are two statements

Statement I: A random variable that assume a infinite or a unaccountably infinite number of values is called continuous random variable.

Statement II: A random variable is called discrete if it has either a finite or a countable number of possible values.

In light of the above statements, choose the *most appropriate* answer

[Question ID = 1981][Question Description = 161_18_WST_AUG22_Q61]
1. Both Statement I and Statement II are correct [Option ID = 7921]
2. Both Statement I and Statement II are incorrect [Option ID = 7922]
3. Statement I is correct but Statement II is incorrect [Option ID = 7923]
4. Statement I is incorrect but Statement II is correct [Option ID = 7924]

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

Assertion A : The polynomial equation x(x+1) +8=(x+2) ×(x-2) is a linear equation.

Reason R : There is only one variable.

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

[Question ID = 1982][Question Description = 162_18_WST_AUG22_Q62]
1. Both **A** and **R** are true and **R** is the correct explanation of **A** [Option ID = 7925]
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A** [Option ID = 7926]
3. **A** is true but **R** is false [Option ID = 7927]
4. **A** is false but **R** is true [Option ID = 7928]

63) The differential equation corresponding to $y = e^{mx}$ by eliminating m is

[Question ID = 1983][Question Description = 163_18_WST_AUG22_Q63]

1. $x \dfrac{dy}{dx} = y \log y$

   [Option ID = 7929]

2. $x \dfrac{dy}{dx} = \log y$

   [Option ID = 7930]

3. $x \dfrac{dy}{dx} = (y - 1) \log y$

   [Option ID = 7931]

4. $x \dfrac{dy}{dx} = (y + 1) \log y$

   [Option ID = 7932]

64) Solve the differential equation

$$\cos x \frac{dy}{dx} - \cos 2x = \cos 3x$$

1. $y = \sin 2x - x + 2x \sin x - \log(secx + tanx) + C$

2. $y = \sin 2x - x + 2 \sin x - \log(secx - tanx) + C$

3. $y = \sin x - x + 2 \sin x - \log(cosx + tanx) + C$

4. $y = \sin 2x - x + 2 \sin x - \log(secx + tanx) + C$

65) Solve $y e^{\frac{x}{y}} dx = \left(x e^{\frac{x}{y}} + y^2 \right) dy, y \neq 0$

1. $e^{\frac{x}{y}} = y - C$

2. $e^{\frac{x}{y}} = y + C$

3. $e^{\frac{x}{y}} = 2y + C$

4. $e^{\frac{x}{y}} = y + 2C$

66) The procedure adopted in the Gauss- Jordan method in solving linear simultaneous equation is that

A. It is required to assume initial approximate values of the variables

B. It reduces the given system of equation to an equivalent triangular system

C. It reduces the given system of equation to a diagonal matrix

D. The given matrix is factored into lower and upper triangular matrix

Choose the *correct* answer

1. A, B and D only [Option ID = 7941]
2. A only [Option ID = 7942]
3. B and C only [Option ID = 7943]
4. C only [Option ID = 7944]

67) One newton is equal to.......
1. 10^2 dyne [Option ID = 7945]
2. 10^4 dyne [Option ID = 7946]
3. 10^7 dyne [Option ID = 7947]
4. 10^5 dyne [Option ID = 7948]

68) When common salt is dissolved in water, the surface tension of saltwater is
1. Increased [Option ID = 7949]
2. Decreased [Option ID = 7950]
3. Not changed [Option ID = 7951]

4. First increases then decrease [Option ID = 7952]

69) What is Joule/second[Question ID = 1989][Question Description = 169_18_WST_AUG22_Q69]
1. Dyne [Option ID = 7953]
2. Watt [Option ID = 7954]
3. Newton [Option ID = 7955]
4. Pascal [Option ID = 7956]

70) The hydraulic jump occurs in a channel when[Question ID = 1990][Question Description = 170_18_WST_AUG22_Q70]
1. Depth of flow changes from sub critical to super critical [Option ID = 7957]
2. Depth of flow changes from super critical to subcritical [Option ID = 7958]
3. There is change of slope [Option ID = 7959]
4. The flow occurs in an adverse channel [Option ID = 7960]

71) Match List I with List II

List I	List II
A. Profit maximization factor demand function	I. ESS/TSS
B. Not a market failure	II. Factor and output prices
C. Most liquid asset	III. Bonds
D. Coefficient of determination R^2	IV. Economics of scale

Choose the correct answer from the options given below:

[Question ID = 1991][Question Description = 171_18_WST_AUG22_Q71]
1. A - IV , B - III , C - II , D - I [Option ID = 7961]
2. A - II , B - IV , C - III , D - I [Option ID = 7962]
3. A - II , B - I , C - III , D - IV [Option ID = 7963]
4. A - IV , B - II , C - III , D - I [Option ID = 7964]

72) "The market value of all final goods and services produced within a nation in a given year." This is best describes[Question ID = 1992][Question Description = 172_18_WST_AUG22_Q72]
1. Net domestic Product [Option ID = 7965]
2. Gross Domestic Product [Option ID = 7966]
3. National Income [Option ID = 7967]
4. Personal Income [Option ID = 7968]

73) Forces are called coplanar when all of them acting on a body lie in

[Question ID = 1993][Question Description = 173_18_WST_AUG22_Q73]
1. One Plane [Option ID = 7969]
2. One Point [Option ID = 7970]
3. Different planes [Option ID = 7971]
4. Perpendicular planes [Option ID = 7972]

74) The motor used for the compressors is[Question ID = 1994][Question Description = 174_18_WST_AUG22_Q74]
1. DC series motor [Option ID = 7973]
2. Capacitor start capacitor run motor [Option ID = 7974]
3. Shaded pole motor [Option ID = 7975]
4. Reluctance motor [Option ID = 7976]

75) What is the pressure exerted in kN/m^2 at a point 1070 mm below the free surface of water?[Question ID = 1995][Question Description = 175_18_WST_AUG22_Q75]
1. 10.5 kN/m^2 [Option ID = 7977]
2. 15 kN/m^2 [Option ID = 7978]
3. 9 kN/ m^2 [Option ID = 7979]
4. 8 kN/ m^2 [Option ID = 7980]

76) The change in volume of a certain mass of liquid is observed to be 1/500 of original volume, when pressure on it is increased by 50 kgf/cm^2(or 5000kN/m^2). Find the bulk modulus of liquid

[Question ID = 1996][Question Description = 176_18_WST_AUG22_Q76]
1. $2.5×10^4$ kgf/cm^2 [Option ID = 7981]
2. $5.5×10^4$ kgf/cm^2 [Option ID = 7982]
3. $9.5 ×10^4$ kgf/cm^2 [Option ID = 7983]
4. $15.6×10^4$ kgf/cm^2 [Option ID = 7984]

77) Where will be the location of centre of pressure if a beaker contains water up to a height of 'h'

[Question ID = 1997][Question Description = 177_18_WST_AUG22_Q77]
1. h/3 [Option ID = 7985]
2. h/2 from the surface [Option ID = 7986]
3. 2h/3 from the surface [Option ID = 7987]
4. h/6 from the surface [Option ID = 7988]

78) Given below are two statements

Statement I: If net work done is positive, the kinetic energy of a moving object increases.

Statement II: If net work done is negative, the displacement of a moving object accelerates.

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

[Question ID = 1998][Question Description = 178_18_WST_AUG22_Q78]
1. Statement I and 2 both are correct [Option ID = 7989]
2. Sattement 1 and 2 both are incorrec [Option ID = 7990]
3. Sattement 1 is correct but statement 2 is incorrect [Option ID = 7991]
4. Statment 2 is correct but statement 1 is incorrect [Option ID = 7992]

79) Phosphate potential (pK$_{sp}$)= ?[Question ID = 1999][Question Description = 179_18_WST_AUG22_Q79]
1. pK$_{sp}$=pCa + 1/2pH$_2$PO$_4$ [Option ID = 7993]
2. pK$_{sp}$=1/2pCa + pH$_2$PO$_4$ [Option ID = 7994]
3. pK$_{sp}$= pCa + pH$_2$PO$_4$ [Option ID = 7995]
4. pK$_{sp}$= pCa + 1/4 pH$_2$PO$_4$ [Option ID = 7996]

80) rH is used to indicate?[Question ID = 2000][Question Description = 180_18_WST_AUG22_Q80]
1. Reduction status of soil [Option ID = 7997]
2. Oxidation status of soil [Option ID = 7998]
3. Reduction as well as oxidation status of soil [Option ID = 7999]
4. Salinity status of soil [Option ID = 8000]

81) In a soil saturated with water

A. Surface tension increases

B. Surface tension decreases

C. Adhesion decreases

D. Adhesion increases

E. Adhesion and cohesion increases

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

[Question ID = 2001][Question Description = 181_18_WST_AUG22_Q81]
1. A and D only [Option ID = 8001]
2. E only [Option ID = 8002]
3. A and E only [Option ID = 8003]
4. B and C only [Option ID = 8004]

82) How porosity, bulk density and particle density are related?[Question ID = 2002][Question Description = 182_18_WST_AUG22_Q82]
1. Porosity= 1+ (Particle Density/Bulk Density) [Option ID = 8005]
2. Porosity= 1+ (Bulk Density / Particle Density) [Option ID = 8006]
3. Porosity= 1- (Bulk Density / Particle Density) [Option ID = 8007]
4. Porosity= 1- (Particle Density / Bulk Density) [Option ID = 8008]

83) The settling rates of dispersed soil particles in hydrometer method of soil texture determination is governed by[Question ID = 2003][Question Description = 183_18_WST_AUG22_Q83]
1. Darcy's law [Option ID = 8009]
2. Stoke's law [Option ID = 8010]
3. Bernoulli's principle [Option ID = 8011]
4. Poiseuille's law [Option ID = 8012]

84) Assumptions made in Darcy's law are

A. Kinetic energy of water is negligible

B. Mass density of water is constant

C. Viscosity of water is constant

D. Flow is turbuelnt

E. Viscosity of water is not constant

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

[Question ID = 2004][Question Description = 184_18_WST_AUG22_Q84]
1. A, B and D only [Option ID = 8013]
2. E only [Option ID = 8014]
3. A, C and D only [Option ID = 8015]
4. A, B and C only [Option ID = 8016]

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

Assertion A : Evapotranspiration decreases with increasing salinity level in soil.

Reason R : Low water availability is caused by high osmotic pressure of soil solution.

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

[Question ID = 2005][Question Description = 185_18_WST_AUG22_Q85]
1. Both **A** and **R** are true and **R** is the correct explanation of **A** [Option ID = 8017]
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A** [Option ID = 8018]
3. **A** is true but **R** is false [Option ID = 8019]
4. **A** is false but **R** is true [Option ID = 8020]

86) Some plants are able to excrete the absorbed salts through specialised structures

A. Stomata

B. Hydathodes

C. Guard cells

D. Chloroplast

E. Capillary

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

[Question ID = 2006][Question Description = 186_18_WST_AUG22_Q86]
1. A, B and D only [Option ID = 8021]
2. A and C only [Option ID = 8022]
3. B only [Option ID = 8023]
4. A and E only [Option ID = 8024]

87) The essentiality of nitrogen for plant growth was discovered by[Question ID = 2007][Question Description = 187_18_WST_AUG22_Q87]
1. Priestley [Option ID = 8025]
2. C. Sprengel [Option ID = 8026]
3. Theodore de Saussure [Option ID = 8027]
4. Arnon and Stout [Option ID = 8028]

88) Given below are two statements

Statement I: Alkali soils turn black when wet because of humic acid fracton of organic matter.

Statement I: A sparingly soluble salt like gypsum is always present in alkali soils.

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

[Question ID = 2008][Question Description = 188_18_WST_AUG22_Q88]
1. Both Statement I and Statement II are true [Option ID = 8029]
2. Statement I is true but Statement II is false [Option ID = 8030]
3. Both Statement I and Statement II are false [Option ID = 8031]
4. Statement I is false but Statement II is true [Option ID = 8032]

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

Assertion A : Infiltration rate is found to vary inversely with soil moisture content.

Reason R : With the increase in soil moisture content, the soil pores are filled with water.

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

[Question ID = 2009][Question Description = 189_18_WST_AUG22_Q89]
1. Both **A** and **R** are true and **R** is the correct explanation of **A** [Option ID = 8033]
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A** [Option ID = 8034]
3. **A** is true but **R** is false [Option ID = 8035]
4. **A** is false but **R** is true [Option ID = 8036]

90) Given below are two statements

Statement I: In wet tri-acids oxidation, HNO_3 - H_2SO_4 - $HCLO_4$ are used for release of nutrients from plants tissues.

Statement II: In tri-acid mixture AR Grade concentration HNO_3, H_2SO_4 and $HCLO_4$ are used in the ratio of 4 : 1 : 10, respectively.

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

[Question ID = 2010][Question Description = 190_18_WST_AUG22_Q90]
1. Both Statement I and Statement II are true [Option ID = 8037]
2. Both Statement I and Statement II are false [Option ID = 8038]
3. Statement I is true but Statement II is false [Option ID = 8039]
4. Statement I is false but Statement II is true [Option ID = 8040]

91) Normality of H_2SO_4 is[Question ID = 2011][Question Description = 191_18_WST_AUG22_Q91]
1. Molecular mass/1 [Option ID = 8041]
2. Molecular mass/2 [Option ID = 8042]
3. Molecular mass/4 [Option ID = 8043]
4. Molecular mass/0.5 [Option ID = 8044]

92) Soil consistency depends upon physical forces of[Question ID = 2012][Question Description = 192_18_WST_AUG22_Q92]
1. Cohesion [Option ID = 8045]
2. Adhesion [Option ID = 8046]
3. Cohesion and adhesion [Option ID = 8047]
4. Capillary force [Option ID = 8048]

93) Volume of water present in total pore volume of soil is referred as[Question ID = 2013][Question Description = 193_18_WST_AUG22_Q93]
1. Volume wetness [Option ID = 8049]
2. Degree of saturation [Option ID = 8050]
3. Porosity [Option ID = 8051]
4. Void ratio [Option ID = 8052]

94) Match List I with List II

List I	List II
Crop	Effective root zone depth (cm)
A. Rice	I. 40
B. Maize	II. 90
C. Safflower	III. 120
D. Wheat	IV. 180

Choose the correct answer from the options given below:

[Question ID = 2014][Question Description = 194_18_WST_AUG22_Q94]
1. A - III, B - IV, C - II, D - I

   [Option ID = 8053]
2. A - IV, B - II, C - III, D - I

   [Option ID = 8054]
3. A - I, B - III, C - IV, D - II

   [Option ID = 8055]
4. A - II, B - IV, C - III, D - I

   [Option ID = 8056]

95) Water potential is a measure of[Question ID = 2015][Question Description = 195_18_WST_AUG22_Q95]

1. Free energy status of water [Option ID = 8057]
2. Free chemical energy status of water [Option ID = 8058]
3. Free thermal energy status of water [Option ID = 8059]
4. Entropy of water [Option ID = 8060]

96) The dimension of Hydraulic Conductivity is

[Question ID = 2016][Question Description = 196_18_WST_AUG22_Q96]
1. LT^{-1} [Option ID = 8061]
2. $L^{-1}T$ [Option ID = 8062]
3. $L^{-1}T^{-1}$ [Option ID = 8063]
4. LT [Option ID = 8064]

97) Fourier's law is applicable for[Question ID = 2017][Question Description = 197_18_WST_AUG22_Q97]
1. Water flow in soil [Option ID = 8065]
2. Airflow in soil [Option ID = 8066]
3. Nutrient flow in soil [Option ID = 8067]
4. Heat flow in soil [Option ID = 8068]

98) Given below are two statements

Statement I: Electrochemical potential is always exhibited by electrically neutral solutes in soil.

Statement II: Electrostatic potential exhibited by charged as well as non-charged solutes in soil.

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

[Question ID = 2018][Question Description = 198_18_WST_AUG22_Q98]
1. Both Statement I and Statement II are true [Option ID = 8069]
2. Both Statement I and Statement II are false [Option ID = 8070]
3. Statement I is true but Statement II is false [Option ID = 8071]
4. Statement I is false but Statement II is true [Option ID = 8072]

99) Operating pressure for sprinkler head is considered as most practical ranging from

[Question ID = 2019][Question Description = 199_18_WST_AUG22_Q99]
1. 1.4 – 4.2 kg/cm^2 [Option ID = 8073]
2. 0.35 – 1.0 kg/cm^2 [Option ID = 8074]
3. 3.5 – 7.0 kg/cm^2 [Option ID = 8075]
4. 5.6 - 8.4 kg/cm^2 [Option ID = 8076]

100) The ratio of crop yield to the amount of water depleted by the crop during ET is called as

[Question ID = 2020][Question Description = 200_18_WST_AUG22_Q100]
1. crop water use efficiency [Option ID = 8077]
2. field water use efficiency [Option ID = 8078]
3. water application efficiency [Option ID = 8079]
4. water storage efficiency [Option ID = 8080]

101) Lake evaporation measured by[Question ID = 2021][Question Description = 201_18_WST_AUG22_Q101]
1. USWB Class A pan [Option ID = 8081]
2. Lysimeter [Option ID = 8082]
3. Field plot [Option ID = 8083]
4. Tensiometer [Option ID = 8084]

102) The overland flow in an irrigation border strip is a case of[Question ID = 2022][Question Description = 202_18_WST_AUG22_Q102]
1. unsteady flow only [Option ID = 8085]
2. steady flow only [Option ID = 8086]
3. steady flow with decreasing discharge [Option ID = 8087]
4. unsteady flow with decreasing discharge [Option ID = 8088]

103) On sloping fields the submain pipe should be laid

[Question ID = 2023][Question Description = 203_18_WST_AUG22_Q103]
1. at 500m distance from the source [Option ID = 8089]
2. along the contour [Option ID = 8090]
3. along the slope [Option ID = 8091]
4. across the slope [Option ID = 8092]

104) The principal meteorological factor influencing evapotranspiration is:[Question ID = 2024][Question Description = 204_18_WST_AUG22_Q104]

1. air temperature [Option ID = 8093]
2. solar radiation [Option ID = 8094]
3. humidity [Option ID = 8095]
4. wind speed [Option ID = 8096]

105) Which of the following is an agronomical measure of erosion control?

[Question ID = 2025][Question Description = 205_18_WST_AUG22_Q105]

1. Bench terracing [Option ID = 8097]
2. Contour bunding [Option ID = 8098]
3. Graded bunding [Option ID = 8099]
4. Strip cropping [Option ID = 8100]

106) The minimum land slope required for irrigation through surface methods is:

[Question ID = 2026][Question Description = 206_18_WST_AUG22_Q106]

1. 0.01% [Option ID = 8101]
2. 0.05% [Option ID = 8102]
3. 0.10% [Option ID = 8103]
4. 0.15% [Option ID = 8104]

107) Match List I with List II

List I	List II
A. Water meter	I. Measurement of flow in rivers and canals
B. Parshall flume	II. Flow measurement in parshall flumes
C. Current meter	III. Measurement of flow in pipes
D. Stilling well	IV. Flow measurement in open channels
E. Meter gate	V. Modified submerged orifice

Choose the correct answer from the options given below:

[Question ID = 2027][Question Description = 207_18_WST_AUG22_Q107]

1. A-IV, B-V, C-II, D-I, E-III [Option ID = 8105]
2. A-I, B-II, C-III, D-IV, E-V [Option ID = 8106]
3. A-II, B-IV, C-III, D-V, E-I [Option ID = 8107]
4. A-III, B-IV, C-I, D-II, E-V [Option ID = 8108]

108) The most suitable device for the measurement of flow in irrigation furrow is

[Question ID = 2028][Question Description = 208_18_WST_AUG22_Q108]

1. Portable Parshall flume [Option ID = 8109]
2. Dethridge meter [Option ID = 8110]
3. V-notch weir [Option ID = 8111]
4. Submerged orifice [Option ID = 8112]

109) Given below are two statements

Statement I: Check basin irrigation is mostly used for cultivation of rice crop in India

Statement II: The size of the check basins in rice fields varies with the size of the irrigation stream and does not depend on the infiltration characteristics of the soil.

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

[Question ID = 2029][Question Description = 209_18_WST_AUG22_Q109]

1. Both Statement I and Statement II are true [Option ID = 8113]
2. Both Statement I and Statement II are false [Option ID = 8114]
3. Statement I is true but Statement II is false [Option ID = 8115]
4. Statement I is false but Statement II is true [Option ID = 8116]

110) Choose the correct answer from the given below terms in decreasing order of irrigation requirement

A. Consumptive Irrigation Requirement (CIR)

B. Net Irrigation Requirement (NIR)

C. Field Irrigation Requirement (FIR)

D. Gross Irrigation Requirement (GIR)

[Question ID = 2030][Question Description = 210_18_WST_AUG22_Q110]
1. CIR>FIR>GIR>NIR [Option ID = 8117]
2. CIR>GIR>FIR>NIR [Option ID = 8118]
3. GIR>FIR>CIR>NIR [Option ID = 8119]
4. GIR>FIR>NIR>CIR [Option ID = 8120]

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

Assertion A: The irrigation efficiency in India is only about 35% to 40%.

Reason R: Performance evaluation of irrigation system is useful to examine the efficiency of each component of the system and helps to take necessary measures for improvement in efficiency.

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

[Question ID = 2031][Question Description = 211_18_WST_AUG22_Q111]
1. Both **A** and **R** are correct and **R** is the correct explanation of **A** [Option ID = 8121]
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A** [Option ID = 8122]
3. **A** is correct but **R** is not correct [Option ID = 8123]
4. **A** is not correct but **R** is correct [Option ID = 8124]

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

Assertion A: Rice occupies about 40% of the irrigated area in India and mostly grown in clayey soils

Reason R: Kharif crops requires a lot of water to grow and clayey texture of soil has less percolation rate

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

[Question ID = 2032][Question Description = 212_18_WST_AUG22_Q112]
1. Both **A** and **R** are correct and **R** is the correct explanation of **A** [Option ID = 8125]
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A** [Option ID = 8126]
3. **A** is correct but **R** is not correct [Option ID = 8127]
4. **A** is not correct but **R** is correct [Option ID = 8128]

113) The rate of evaporation from a water surface increases if

A. difference of vapour pressure between water and air is increased

B. velocity of wind is decreased

C. concentration of soluble solids in water is decreased

D. altitude is high

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

[Question ID = 2033][Question Description = 213_18_WST_AUG22_Q113]
1. A, B and C only [Option ID = 8129]
2. A and D only [Option ID = 8130]
3. B and D only [Option ID = 8131]
4. A, C and D only [Option ID = 8132]

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

Assertion A: The Cipoletti weir is a trapazoidal weir used for the measurement of flow in irrigation channel.

Reason R: It does not require corrections for end contractions and commonly used for high discharge measurement.

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

[Question ID = 2034][Question Description = 214_18_WST_AUG22_Q114]
1. Both **A** and **R** are correct and **R** is the correct explanation of **A** [Option ID = 8133]
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A** [Option ID = 8134]
3. **A** is correct but **R** is not correct [Option ID = 8135]
4. **A** is not correct but **R** is correct [Option ID = 8136]

115) The most commonly used lining material for canals in India is:

[Question ID = 2035][Question Description = 215_18_WST_AUG22_Q115]
1. cement concrete [Option ID = 8137]

2. cement mortar [Option ID = 8138]
3. low density polyethylene film [Option ID = 8139]
4. bricks or tiles in sandwitched cement mortar [Option ID = 8140]

116) **Given below are two statements**

Statement I: Crop coefficient (Kc) values are important for estimation of crop water requirement and water requirement varies from crop to crop.

Statement II: The value of Kc increases with duration of the crops.

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

[Question ID = 2036][Question Description = 216_18_WST_AUG22_Q116]
1. Both Statement I and Statement II are true [Option ID = 8141]
2. Both Statement I and Statement II are false [Option ID = 8142]
3. Statement I is true but Statement II is false [Option ID = 8143]
4. Statement I is false but Statement II is true [Option ID = 8144]

117) **If net irrigation for a crop is 8 cm and field efficiency is 75%, then gross irrigation depth to be applied will be**

[Question ID = 2037][Question Description = 217_18_WST_AUG22_Q117]
1. 10.66 cm [Option ID = 8145]
2. 9.82 cm [Option ID = 8146]
3. 8.75 cm [Option ID = 8147]
4. 12 cm [Option ID = 8148]

118) **Find the delta for sugarcane when its duty is 730 hectares/cumec on the field and the base period of the crop being 110 days**[Question ID = 2038][Question Description = 218_18_WST_AUG22_Q118]
1. 57 cm [Option ID = 8149]
2. 130 cm [Option ID = 8150]
3. 1.3 cm [Option ID = 8151]
4. 105 cm [Option ID = 8152]

119) **If the field capacity of soil is 22%, its permanent wilting point is 12%, apparent specific gravity of soil specific is 1.5 g/cc. and the depth of rootzone of a crop is 100 cm, then the storage capacity of soil is**

[Question ID = 2039][Question Description = 219_18_WST_AUG22_Q119]
1. 12 cm [Option ID = 8153]
2. 15 cm [Option ID = 8154]
3. 10 cm [Option ID = 8155]
4. 16 cm [Option ID = 8156]

120) **Match List I with List II**

List I	List II
A. Thornthwaite formula	I. Weather data
B. Stefan-Boltzman constant	II. Solar radiation
C. Albedo	III. Value of constant C in Dalton's equation
D. Rower	IV. FAO Penman-Montieth formula
E. FAOCLIM	V. Evapotranspiration

Choose the correct answer from the options given below:

[Question ID = 2040][Question Description = 220_18_WST_AUG22_Q120]
1. A- I, B- II, C- III, D- V, E- IV [Option ID = 8157]
2. A- IV, B- V, C- III, D- II, E- I [Option ID = 8158]
3. A -V, B- IV, C- II, D- III, E- I [Option ID = 8159]
4. A- III, B- V, C- I, D- II, E- IV [Option ID = 8160]