

40 Soil N Water Conservation Engg ICAR SEPT 2022

Topic:- GEN KNOW COMMON PHD

1) Colour of the tag used on certified seed bags is[Question ID = 16958][Question Description = 101_221_GKD_SEP22_Q01]

1. Blue [Option ID = 37829]
2. Purple [Option ID = 37830]
3. White [Option ID = 37831]
4. Golden Yellow [Option ID = 37832]

2) Following are the statements regarding the Usar soil -

- A. It is reclaimed by adding lime.
- B. This soil has pH more than seven.
- C. Paddy crop can be grown in this soil.

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

[Question ID = 16959][Question Description = 102_221_GKD_SEP22_Q02]

1. A and B only [Option ID = 37833]
2. B and C only [Option ID = 37834]
3. C only [Option ID = 37835]
4. A only [Option ID = 37836]

3) When total utility of a commodity increases, marginal utility will be

[Question ID = 16960][Question Description = 103_221_GKD_SEP22_Q03]

1. Negative but increasing
[Option ID = 37837]
2. Positive but decreasing
[Option ID = 37838]
3. Constant
[Option ID = 37839]
4. Either positive or negative
[Option ID = 37840]

4) Where is the headquarter of International Fund for Agriculture Development located?

[Question ID = 16961][Question Description = 104_221_GKD_SEP22_Q04]

1. Vienna, Austria
[Option ID = 37841]
2. Rome, Italy
[Option ID = 37842]
3. New York, USA
[Option ID = 37843]
4. Berlin, Germany
[Option ID = 37844]

5) Mid-Oceanic Ridges are one of the important divisions of the ocean floor. In this respect, point out the incorrect statement regarding the 'Mid-Oceanic Ridges'. [Question ID = 16962][Question Description = 105_221_GKD_SEP22_Q05]

1. It is the largest mountain chain on the surface of the earth [Option ID = 37845]
2. It is a series of interconnected chain within the ocean. [Option ID = 37846]
3. It is characterised by a central rift system [Option ID = 37847]
4. The rift system at the crest is the zone of very low volcanic activity. [Option ID = 37848]

6) Consider the following facts about the union territory of India and point out the one which is incorrect in relation to union territory. [Question ID = 16963][Question Description = 106_221_GKD_SEP22_Q06]

1. These are the areas under the direct control of central government. [Option ID = 37849]
2. Also known as the 'centrally administered territories. [Option ID = 37850]

3. These territories constitute a conspicuous departure from the unitary feature of India. [Option ID = 37851]
4. There is no uniformity in their administrative systems. [Option ID = 37852]

7) Variety of flora and fauna are found in the different types of forest in India. In this regard, species of trees like teak, *sal shisham*, *sandalwood*, etc. are found in which of the following type of forests in India?[Question ID = 16964][Question Description = 107_221_GKD_SEP22_Q07]

1. Tropical evergreen forests [Option ID = 37853]
2. Tropical thorn forests [Option ID = 37854]
3. Tropical deciduous forests [Option ID = 37855]
4. Montane forests [Option ID = 37856]

8) The Marginal Preference Theory of consumption behaviour was proposed by

[Question ID = 16965][Question Description = 108_221_GKD_SEP22_Q08]

1. Armstrong
[Option ID = 37857]
2. J.K.Hicks
[Option ID = 37858]
3. Neumann
[Option ID = 37859]
4. Edmund Cannon
[Option ID = 37860]

9) Point out the incorrect statements regarding the service sector in India.[Question ID = 16966][Question Description = 109_221_GKD_SEP22_Q09]

1. It is the highest contributor to GDP [Option ID = 37861]
2. It requires skilled labour [Option ID = 37862]
3. It is the fastest growing sector [Option ID = 37863]
4. It is restricted to very few sectors. [Option ID = 37864]

10) Consider the statements regarding the agriculture sector in India and point out the incorrect statement.[Question ID = 16967][Question Description = 110_221_GKD_SEP22_Q10]

1. Agriculture sector is the largest employer of workforce [Option ID = 37865]
2. It has contributed to the Gross Value Added (GVA) [Option ID = 37866]
3. Growth in allied sectors is the major drivers of overall growth in the sector. [Option ID = 37867]
4. Minimum Support Price (MSP) policy is used as to promote crop uniformity. [Option ID = 37868]

11) In case of related goods, the cross elasticity of demand is[Question ID = 16968][Question Description = 111_221_GKD_SEP22_Q11]

1. Low [Option ID = 37869]
2. High [Option ID = 37870]
3. Zero [Option ID = 37871]
4. Unity [Option ID = 37872]

12) With reference to organic farming in India, consider the following statements :

- A. The National Programme for Organic Production' (NPOP) is operated under the guidelines and directions of the Union Ministry of Rural Development.
- B. The Agricultural and Processed Food Products Export Development Authority' (APEDA) functions as the Secretariat for the implementation of NPOP.
- C. Sikkim has become India's first fully organic state.

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

[Question ID = 16969][Question Description = 112_221_GKD_SEP22_Q12]

1. A and B only
[Option ID = 37873]
2. B and C only
[Option ID = 37874]
3. C only
[Option ID = 37875]
4. A, B and C

[Option ID = 37876]

13) With reference to the circumstances in Indian agriculture, the concept of "Conservation Agriculture" assumes significance. Which of the following falls under the Conservation Agriculture ?

- A. Avoiding the monoculture practices.
- B. Adopting minimum tillage.
- C. Avoiding the cultivation of plantation crops.
- D. Using crop residues to cover soil surface.
- E. Adopting spatial and temporal crop sequencing/ crop rotations.

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

[Question ID = 16970][Question Description = 113_221_GKD_SEP22_Q13]

- 1. A, C and D only [Option ID = 37877]
- 2. B, C, D and E only [Option ID = 37878]
- 3. B, D and E only [Option ID = 37879]
- 4. A, B, C and E only [Option ID = 37880]

14) Consumers are likely to get a variety of goods in which kind of market competition[Question ID = 16971][Question Description = 114_221_GKD_SEP22_Q14]

- 1. Monopoly [Option ID = 37881]
- 2. Duopoly [Option ID = 37882]
- 3. Oligopoly [Option ID = 37883]
- 4. Monopolistic [Option ID = 37884]

15) What is the correct chronological order of the following laws enacted for the conservation and protection of environment ?

- A. Environment (Protection) Act.
- B. Water (Prevention & Control of Pollution) Act.
- C. Air (Prevention & Control of pollution) Act.
- D. National Green Tribunal Act.

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

[Question ID = 16972][Question Description = 115_221_GKD_SEP22_Q15]

- 1. B, C, A, D [Option ID = 37885]
- 2. A, B, C, D [Option ID = 37886]
- 3. C, B, A, D [Option ID = 37887]
- 4. D, C, B, A [Option ID = 37888]

16) The scientific study of soil is[Question ID = 16973][Question Description = 116_221_GKD_SEP22_Q16]

- 1. Earth Study [Option ID = 37889]
- 2. Soil Science [Option ID = 37890]
- 3. Pedology [Option ID = 37891]
- 4. Soil Chemistry [Option ID = 37892]

17) *Triticum aestivum*, the common bread wheat is -

[Question ID = 16974][Question Description = 117_221_GKD_SEP22_Q17]

- 1. Tetraploid

[Option ID = 37893]

- 2. Hexaploid

[Option ID = 37894]

- 3. Haploid

[Option ID = 37895]

- 4. Diploid

[Option ID = 37896]

18) Sectoral inflation refers to[Question ID = 16975][Question Description = 118_221_GKD_SEP22_Q18]

- 1. Running inflation [Option ID = 37897]

2. Comprehensive inflation [Option ID = 37898]
3. Sporadic inflation [Option ID = 37899]
4. Creeping inflation [Option ID = 37900]

19) Keynes Liquidity trap refers to[Question ID = 16976][Question Description = 119_221_GKD_SEP22_Q19]

1. Speculative demand for money [Option ID = 37901]
2. Transactions motive of money is inelastic [Option ID = 37902]
3. Precautionary motive of money is inelastic [Option ID = 37903]
4. Transactions motive of money is constant [Option ID = 37904]

20) A business is solvent if[Question ID = 16977][Question Description = 120_221_GKD_SEP22_Q20]

1. Total receipts exceed total expenditures [Option ID = 37905]
2. Total debt exceeds total equity [Option ID = 37906]
3. Total sales exceed total cash expense [Option ID = 37907]
4. Total assets exceed total liabilities [Option ID = 37908]

Topic:- Agricultural Engg and Tech_PHD

1) The major objectives of secondary tillage operations are:

- A. to pulverize soil
- B. to reduce strength and compactness of soil
- C. to destroy grasses and weeds
- D. to make the field surface level

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

[Question ID = 4751][Question Description = 101_63_PBF_SEP22_Q01]

1. A, B and C only [Option ID = 19001]
2. B, C and D only [Option ID = 19002]
3. A, C and D only [Option ID = 19003]
4. A, B and D only [Option ID = 19004]

2) The loamy soil with silt as the dominant particle is known as medium soil. The particle size of silt (mm) is:

[Question ID = 4752][Question Description = 102_63_PBF_SEP22_Q02]

1. <0.002
[Option ID = 19005]
2. 0.002-0.05
[Option ID = 19006]
3. 0.05-0.1
[Option ID = 19007]
4. 0.1-0.25
[Option ID = 19008]

3) Which of the following statements are true for precision planting?

- A. Greater crop uniformity
- B. Better yield
- C. Higher income per unit area

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

[Question ID = 4753][Question Description = 103_63_PBF_SEP22_Q03]

1. A, B only [Option ID = 19009]
2. B, C only [Option ID = 19010]
3. A, C only [Option ID = 19011]
4. A, B, C [Option ID = 19012]

4) In order to reduce the speed of seed in furrows, the seed tube is inclined rear ward from the vertical at:[Question ID = 4754][Question Description = 104_63_PBF_SEP22_Q04]

1. 15° - 20° [Option ID = 19013]
2. 25° - 30° [Option ID = 19014]
3. 30° - 45° [Option ID = 19015]

4. 45° - 60° [Option ID = 19016]

5) The outer tip of sweep wing has ground clearance of:[Question ID = 4755][Question Description = 105_63_PBF_SEP22_Q05]

1. 3 - 7 mm [Option ID = 19017]
2. 10 - 15 mm [Option ID = 19018]
3. 15 - 20 mm [Option ID = 19019]
4. 20 - 25 mm [Option ID = 19020]

6) Given below are two statements

Statement I: The tractor operated mist sprayer applies the same quantity of chemical in one-tenth volume compared to a hydraulic sprayer.

Statement II: In electrostatic sprayer the amount of spray material reaching the plant increases significantly due to air assistance only.

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

[Question ID = 4756][Question Description = 106_63_PBF_SEP22_Q06]

1. Both Statement I and Statement II are correct [Option ID = 19021]
2. Both Statement I and Statement II are incorrect [Option ID = 19022]
3. Statement I is correct but Statement II is incorrect [Option ID = 19023]
4. Statement I is incorrect but Statement II is correct [Option ID = 19024]

7) Following types of knife sections are used in a standard cutter bar

- A. Smooth edge type
- B. Top serrated type
- C. Under serrated type

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

[Question ID = 4757][Question Description = 107_63_PBF_SEP22_Q07]

1. A only [Option ID = 19025]
2. A and B only [Option ID = 19026]
3. A and C only [Option ID = 19027]
4. A, B and C only [Option ID = 19028]

8) Which is NOT a type of thresher?

[Question ID = 4758][Question Description = 108_63_PBF_SEP22_Q08]

1. Drum type [Option ID = 19029]
2. Syndicator type [Option ID = 19030]
3. Beater type [Option ID = 19031]
4. Flail type [Option ID = 19032]

9) Determine the percentage increase in linear speed of a mower, without change in crank wheel speed, having drive wheel diameter of 420 mm. The mower is being operated by a 35 hp tractor at a forward speed of 3.52 km.h⁻¹ and the crank wheel makes a rotation of 960 RPM. The change in speed ratio between the crank wheel and drive wheel is 24:1.

[Question ID = 4759][Question Description = 109_63_PBF_SEP22_Q09]

1. 10 [Option ID = 19033]
2. 12 [Option ID = 19034]
3. 14 [Option ID = 19035]
4. 15 [Option ID = 19036]

10) Length of chain conveyor in elevator type potato digger is normally kept in the range of:[Question ID = 4760][Question Description = 110_63_PBF_SEP22_Q10]

1. 1.50 - 1.80 mm [Option ID = 19037]
2. 1.20 - 1.50 mm [Option ID = 19038]
3. 1.00 - 1.20 mm [Option ID = 19039]
4. 0.80 - 1.00 mm [Option ID = 19040]

11) When the wheel steer angle decreased with increasing speed, the under steer coefficient is:[Question ID = 4761]

[Question Description = 111_63_PBF_SEP22_Q11]

1. Zero [Option ID = 19041]
2. Positive [Option ID = 19042]
3. Negative [Option ID = 19043]

4. Neutral [Option ID = 19044]

12) Given below are two statements

Statement I: OSHA standard permits exposure of 85dB(A) for a 16 hour work period

Statement II: As per NIOSH standard, for every 5dB increase in noise, the allowable exposure time is reduced to half

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

[Question ID = 4762][Question Description = 112_63_PBF_SEP22_Q12]

1. Both Statement I and Statement II are true [Option ID = 19045]
2. Both Statement I and Statement II are false [Option ID = 19046]
3. Statement I is true but Statement II is false [Option ID = 19047]
4. Statement I is false but Statement II is true [Option ID = 19048]

13) Which type of mouldboard is preferred for more sticky soils, where it is difficult for other mouldboard to scour well?[Question ID = 4763][Question Description = 113_63_PBF_SEP22_Q13]

1. General purpose [Option ID = 19049]
2. Stubble [Option ID = 19050]
3. Sod [Option ID = 19051]
4. Slat [Option ID = 19052]

14) Operating with restrained links rather than free links provides greater tractor stability. What happens to the vertical load on the tractor rear wheels, while operating with restrained links?

[Question ID = 4764][Question Description = 114_63_PBF_SEP22_Q14]

1. increases
[Option ID = 19053]
2. decreases
[Option ID = 19054]
3. remains same
[Option ID = 19055]
4. no effect on vertical load
[Option ID = 19056]

15) Calculate the oxygen consumption for the agricultural worker in litres per minute, if he expires 180 litres of air having 16% of oxygen in 6 minutes duration.[Question ID = 4765][Question Description = 115_63_PBF_SEP22_Q15]

1. 6.0 [Option ID = 19057]
2. 4.5 [Option ID = 19058]
3. 3.0 [Option ID = 19059]
4. 1.5 [Option ID = 19060]

16) In which gasifier the products from the pyrolysis zone and drying zone pass through oxidation zone causing thermal cracking of volatiles.[Question ID = 4766][Question Description = 116_63_PBF_SEP22_Q16]

1. up draft [Option ID = 19061]
2. down draft [Option ID = 19062]
3. cross draft [Option ID = 19063]
4. fluidized bed [Option ID = 19064]

17) In offset disc harrow as compared to rear gang the couple acting on front gang is:[Question ID = 4767][Question Description = 117_63_PBF_SEP22_Q17]

1. larger [Option ID = 19065]
2. smaller [Option ID = 19066]
3. similar [Option ID = 19067]
4. considerably smaller [Option ID = 19068]

18) The efficiency of diesel engine with high compression and early fuel cut-off is:[Question ID = 4768][Question Description = 118_63_PBF_SEP22_Q18]

1. minimum [Option ID = 19069]
2. maximum [Option ID = 19070]
3. average [Option ID = 19071]
4. lower than average [Option ID = 19072]

19) Front loading is provided on tractors for:[Question ID = 4769][Question Description = 119_63_PBF_SEP22_Q19]

1. increase in pull [Option ID = 19073]
2. weight transfer [Option ID = 19074]
3. safety [Option ID = 19075]
4. lowering vibration [Option ID = 19076]

20) Which type of joint represents the shoulder joints and hip joints?[Question ID = 4770][Question Description = 120_63_PBF_SEP22_Q20]

1. gliding [Option ID = 19077]
2. hinge [Option ID = 19078]
3. saddle [Option ID = 19079]
4. ball & socket [Option ID = 19080]

21) The pupose of batter slope in bench terrace is

[Question ID = 4771][Question Description = 121_63_PBF_SEP22_Q21]

1. to provide stability to filled soil [Option ID = 19081]
2. protection against soil erosion [Option ID = 19082]
3. conserve moisture content [Option ID = 19083]
4. increase water retention [Option ID = 19084]

22) Match List I with List II

List I	List II
A. Metacentre	I. Flow in river
B. Piezometer tube	II. Application of transmission of liquid pressure
C. Hydraulic press	III. Stability of ship
D. Turbulent flow	IV. Static pressure head
	V. Froude's number

Choose the correct answer from the options given below:

[Question ID = 4772][Question Description = 122_63_PBF_SEP22_Q22]

1. A - III, B - I, C - IV, D - V [Option ID = 19085]
2. A - II, B - V, C - IV, D - I [Option ID = 19086]
3. A - III, B - IV, C - II, D - V [Option ID = 19087]
4. A - III, B -IV , C -II , D - I [Option ID = 19088]

23) Given below are two statements

Statement I: Hydraulic jump is a local phenomenon.

Statement II: Hydraulic jump occurs, when the flow changes from super critical flow to sub-critical flow.

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

[Question ID = 4773][Question Description = 123_63_PBF_SEP22_Q23]

1. Both Statement I and Statement II are true [Option ID = 19089]
2. Both Statement I and Statement II are false [Option ID = 19090]
3. Statement I is true but Statement II is false [Option ID = 19091]
4. Statement I is false but Statement II is true [Option ID = 19092]

24) Which sequence of water erosion is classified ?

- A. Raindrop erosion
- B. Rill erosion
- C. Stream bank erosion
- D. Sheet erosion
- E. Gully erosion

Choose the *correct* answer from the options given below

[Question ID = 4774][Question Description = 124_63_PBF_SEP22_Q24]

1. A, C, B, E, D [Option ID = 19093]
2. A, D, B, E, C [Option ID = 19094]
3. A, B, E, D, C [Option ID = 19095]
4. A, D, B, C, E [Option ID = 19096]

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

Assertion A : A cross drainage work is generally a costly construction and must be avoided as far as possible.

Reason R : A cross drainage work is a structure which is constructed at the crossing of a canal and a natural drain, so as to dispose of drainage water without interrupting the continuous canal supplies.

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

[Question ID = 4775][Question Description = 125_63_PBF_SEP22_Q25]

1. Both A and R are true and R is the correct explanation of A [Option ID = 19097]
2. Both A and R are true but R is NOT the correct explanation of A [Option ID = 19098]
3. A is true but R is false [Option ID = 19099]
4. A is false but R is true [Option ID = 19100]

26) Match List I with List II

List I	List II
A. Field channel	I. Warabandi system
B. Base period	II. On Farm Development work
C. Rotational irrigation	III. Cross-drainage work
D. Aqueduct	IV. First irrigation to last irrigation
	V. Time from sowing to harvest of crop

Choose the correct answer from the options given below:

[Question ID = 4776][Question Description = 126_63_PBF_SEP22_Q26]

1. A - II , B - V , C - III, D - I [Option ID = 19101]
2. A - II, B - IV , C - I , D - III [Option ID = 19102]
3. A - II , B - V , C - IV, D - I [Option ID = 19103]
4. A - III, B - V , C - IV , D -II [Option ID = 19104]

27) Given below are two statements

Statement I: Gross command area of a major irrigation project is more than the culturable command area.

Statement II: Base period of a crop is more than crop period.

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

[Question ID = 4777][Question Description = 127_63_PBF_SEP22_Q27]

1. Both Statement I and Statement II are true [Option ID = 19105]
2. Both Statement I and Statement II are false [Option ID = 19106]
3. Statement I is true but Statement II is false [Option ID = 19107]
4. Statement I is false but Statement II is true [Option ID = 19108]

28) A. The zone of aeration consists of interstices occupied partially by water and partially by air.

B. Specific yield is the moisture content of soil in the zone of aeration.

C. In the zone of saturation all interstices are filled with water under hydrostatic pressure.

D. Capillary zone is a sub-zone of zone of saturation.

E. The thickness of the capillary zone will vary inversely with the pore size of the soil or rock.

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

[Question ID = 4778][Question Description = 128_63_PBF_SEP22_Q28]

1. A, B and D only [Option ID = 19109]
2. A, B, D and E only [Option ID = 19110]
3. A, C and E only [Option ID = 19111]
4. A, C, D and E only [Option ID = 19112]

29) Maximum water development can only be attained by combined use of surface and groundwater is known as [Question ID = 4779][Question Description = 129_63_PBF_SEP22_Q29]

1. Capillary use [Option ID = 19113]
2. Conjunctive use [Option ID = 19114]
3. Consumptive use [Option ID = 19115]
4. Safe yield [Option ID = 19116]

30) Contour trenching is NOT suitable on the slopes

[Question ID = 4780][Question Description = 130_63_PBF_SEP22_Q30]

1. less than 20 % [Option ID = 19117]
2. greater than 20 % [Option ID = 19118]
3. less than 10 % [Option ID = 19119]
4. less than 2 % [Option ID = 19120]

31) Given below are two statements

Statement I: Bunds are constructed with land slope 2 to 10 %.

Statement II: Contour bunds are recommended for the areas of low rainfall.

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

[Question ID = 4781][Question Description = 131_63_PBF_SEP22_Q31]

1. Both Statement I and Statement II are true [Option ID = 19121]
2. Both Statement I and Statement II are false [Option ID = 19122]
3. Statement I is true but Statement II is false [Option ID = 19123]
4. Statement I is false but Statement II is true [Option ID = 19124]

32) Match List I with List II

List I	List II
A. Intensity of pressure	I. Dupuit's formula
B. Flow through porous media	II. Manning's formula
C. Channel design	III. Darcy's law
D. Well hydraulics	IV. Pascal's law
	V. Archimedes' principle

Choose the correct answer from the options given below:

[Question ID = 4782][Question Description = 132_63_PBF_SEP22_Q32]

1. A - IV, B - III, C - II, D - I [Option ID = 19125]
2. A - IV, B - III, C - II, D - V [Option ID = 19126]
3. A - V, B - II, C - III, D - IV [Option ID = 19127]
4. A - III, B - II, C - I, D - V [Option ID = 19128]

33) Given below are two statements

Statement I: Diversion drain has lesser grade and is laid along the slope.

Statement II: Grassed waterway is laid across the slope.

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

[Question ID = 4783][Question Description = 133_63_PBF_SEP22_Q33]

1. Both Statement I and Statement II are true [Option ID = 19129]
2. Both Statement I and Statement II are false [Option ID = 19130]
3. Statement I is true but Statement II is false [Option ID = 19131]
4. Statement I is false but Statement II is true [Option ID = 19132]

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

Assertion A: In arid region percussion drilling method of tubewell construction is adopted.

Reason R: In percussion drilling method of tubewell construction minimum water is required.

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

[Question ID = 4784][Question Description = 134_63_PBF_SEP22_Q34]

1. Both A and R are correct and R is the correct explanation of A [Option ID = 19133]
2. Both A and R are correct but R is NOT the correct explanation of A [Option ID = 19134]
3. A is correct but R is not correct [Option ID = 19135]
4. A is not correct but R is correct [Option ID = 19136]

35) A hydrograph is a plot of [Question ID = 4785][Question Description = 135_63_PBF_SEP22_Q35]

1. Cumulative runoff against time [Option ID = 19137]
2. Cumulative rainfall against time [Option ID = 19138]
3. Rainfall intensity against time [Option ID = 19139]
4. Stream discharge against time [Option ID = 19140]

36) A Cipolletti weir is a trapezoidal weir having side slope of [Question ID = 4786][Question Description = 136_63_PBF_SEP22_Q36]

1. 1 vertical to 4 horizontal [Option ID = 19141]
2. 1 horizontal to 4 vertical [Option ID = 19142]
3. 1 vertical to 2 horizontal [Option ID = 19143]
4. 1 horizontal to 2 vertical [Option ID = 19144]

37) The tube wells are compared with respect to their[Question ID = 4787][Question Description = 137_63_PBF_SEP22_Q37]

1. Well yield [Option ID = 19145]
2. Well efficiency [Option ID = 19146]
3. Specific capacity [Option ID = 19147]
4. Specific yield [Option ID = 19148]

38) Given below are two statements

Statement I: A canal outlet is a structure built at the head of the tertiary unit to deliver water from the canal to the field water courses.

Statement II: Water is taken from the field water courses for irrigating individual fields.

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

[Question ID = 4788][Question Description = 138_63_PBF_SEP22_Q38]

1. Both Statement I and Statement II are true [Option ID = 19149]
2. Both Statement I and Statement II are false [Option ID = 19150]
3. Statement I is true but Statement II is false [Option ID = 19151]
4. Statement I is false but Statement II is true [Option ID = 19152]

39) Given below are two statements

Statement I: In planning farm irrigation system, the alignment of field channels are generally done on ridges.

Statement II: Field channel is not a component of on-farm development work.

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

[Question ID = 4789][Question Description = 139_63_PBF_SEP22_Q39]

1. Both Statement I and Statement II are true [Option ID = 19153]
2. Both Statement I and Statement II are false [Option ID = 19154]
3. Statement I is true but Statement II is false [Option ID = 19155]
4. Statement I is false but Statement II is true [Option ID = 19156]

40) Given below are two statements

Statement I: The absolute pressure is equal to the sum of atmospheric pressure and vacuum pressure.

Statement II: The pressure measured with the help of a piezometer tube is gauge pressure.

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

[Question ID = 4790][Question Description = 140_63_PBF_SEP22_Q40]

1. Both Statement I and Statement II are true [Option ID = 19157]
2. Both Statement I and Statement II are false [Option ID = 19158]
3. Statement I is true but Statement II is false [Option ID = 19159]
4. Statement I is false but Statement II is true [Option ID = 19160]

41) Properties which deals with deformation and flow of the material under the action of applied force are -

- A. Electrical properties
- B. Rheological properties
- C. Physical properties
- D. Frictional properties
- E. Optical properties

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

[Question ID = 4791][Question Description = 141_63_PBF_SEP22_Q41]

1. A only [Option ID = 19161]
2. B only [Option ID = 19162]
3. C and B only [Option ID = 19163]
4. D and E only [Option ID = 19164]

42) Match List I with List II

List I	List II
A. Protein	I. Pasteurization
B. HTST	II. Amino acid
C. Multiple effect	III. Gelatinization
D. Starch	IV. Evaporator

Choose the correct answer from the options given below:

[Question ID = 4792][Question Description = 142_63_PBF_SEP22_Q42]

1. A - II, B - I, C - III, D - IV [Option ID = 19165]
2. A - II, B - IV, C - I, D - III [Option ID = 19166]
3. A - II, B - I, C - IV, D - III [Option ID = 19167]
4. A - I, B - II, C - IV, D - III [Option ID = 19168]

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

Assertion A : Sensible cooling increases the relative humidity of air.

Reason R : Humidity ratio of air does not change during sensible cooling.

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

[Question ID = 4793][Question Description = 143_63_PBF_SEP22_Q43]

1. Both A and R are true and R is the correct explanation of A [Option ID = 19169]
2. Both A and R are true but R is NOT the correct explanation of A [Option ID = 19170]
3. A is true but R is false [Option ID = 19171]
4. A is false but R is true [Option ID = 19172]

44) Cover and plinth is a method of [Question ID = 4794][Question Description = 144_63_PBF_SEP22_Q44]

1. Fruit storage [Option ID = 19173]
2. Grain storage [Option ID = 19174]
3. Vegetable storage [Option ID = 19175]
4. Packaging [Option ID = 19176]

45) Which among the following equipment is used to separate the material of same size and of different densities?

- A. Screen cleaner
- B. Destoner
- C. Roller sorter
- D. Diverging belt sorter
- E. Specific gravity separator

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

[Question ID = 4795][Question Description = 145_63_PBF_SEP22_Q45]

1. A, B and D only [Option ID = 19177]
2. E only [Option ID = 19178]
3. A, B and C only [Option ID = 19179]
4. B and E only [Option ID = 19180]

46) Energy requirement equation for size reduction is given by

[Question ID = 4796][Question Description = 146_63_PBF_SEP22_Q46]

1. Newton [Option ID = 19181]
2. Janssen [Option ID = 19182]
3. Rittinger [Option ID = 19183]
4. Airy [Option ID = 19184]

47) Moisture content at which rate of drying ceases to be constant is known as

[Question ID = 4797][Question Description = 147_63_PBF_SEP22_Q47]

1. Equilibrium moisture content [Option ID = 19185]
2. Stop moisture content [Option ID = 19186]
3. Critical moisture content [Option ID = 19187]
4. Constant rate moisture content [Option ID = 19188]

48) Process of parboiling includes which of the following unit operations?

- A. Soaking
- B. Steaming
- C. Drying
- D. Pearling
- E. Dehusking

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

[Question ID = 4798][Question Description = 148_63_PBF_SEP22_Q48]

1. B and C only [Option ID = 19189]
2. A, B and C only [Option ID = 19190]
3. A, B and D only [Option ID = 19191]
4. C and E only [Option ID = 19192]

49) Given below are two statements, one is labelled as Assertion A and the other is labelled as Reason R
Assertion A : Under identical temperatures of hot and cold fluids, parallel flow heat exchangers are efficient than counter flow heat exchangers.

Reason R : Temperature gradient gradually reduces along the length of parallel flow heat exchangers.

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

[Question ID = 4799][Question Description = 149_63_PBF_SEP22_Q49]

1. Both A and R are true and R is the correct explanation of A [Option ID = 19193]
2. Both A and R are true but R is NOT the correct explanation of A [Option ID = 19194]
3. A is true but R is false [Option ID = 19195]
4. A is false but R is true [Option ID = 19196]

50) Which of the following process destroys microbes including spores?

- A. Parboiling
- B. Evaporation
- C. Drying
- D. Sterilization
- E. Pasteurization

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

[Question ID = 4800][Question Description = 150_63_PBF_SEP22_Q50]

1. B only [Option ID = 19197]
2. A and D only [Option ID = 19198]
3. D only [Option ID = 19199]
4. C and E only [Option ID = 19200]

Topic:- 40 Soil and Water Conservation Engineering_PHD

1) The properties of the semi-confined aquifer may be expressed in terms of its

- A. Hydraulic conductivity and transmissibility
- B. Storage coefficient and specific yield
- C. Leakage factor
- D. Hydraulic resistance
- E. Radius of influence

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

[Question ID = 4851][Question Description = 101_65_SWC_SEP22_Q01]

1. A, B, C and D only [Option ID = 19401]
2. A, B, D and E only [Option ID = 19402]
3. A, D, E and C only [Option ID = 19403]
4. A, B, C and E only [Option ID = 19404]

2) The value of hydraulic resistance of semi-pervious layer generally ranges between [Question ID = 4852][Question Description = 102_65_SWC_SEP22_Q02]

1. 100-500 min [Option ID = 19405]
2. 100-5000 min [Option ID = 19406]
3. 100-10000 min [Option ID = 19407]
4. 100-1000000 min [Option ID = 19408]

3) This developed non-steady state analysis to determine the aquifer parameters by introducing the

[Question ID = 4853][Question Description = 103_65_SWC_SEP22_Q03]

1. Time factor [Option ID = 19409]
2. Storage coefficient and transmissibility [Option ID = 19410]
3. Time factor and storage coefficient [Option ID = 19411]
4. Hydraulic resistance and leakage factor [Option ID = 19412]

4) The methods available for gully control are

- A. Diversion of runoff
- B. Construction of farm pond
- C. Vegetative methods
- D. Construction of temporary structures
- E. Construction of permanent structures

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

[Question ID = 4854][Question Description = 104_65_SWC_SEP22_Q04]

1. A, B, C and D only [Option ID = 19413]
2. A, B, D and E only [Option ID = 19414]
3. A, C, D and E only [Option ID = 19415]
4. B, C, D and E only [Option ID = 19416]

5) After the gully erosion is initiated, the development of the gully is accelerated due to

- A. Erosion of the bed
- B. Sliding and mass movement of the sides
- C. Water storage at the end of the gully
- D. Seepage of water through the bed

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

[Question ID = 4855][Question Description = 105_65_SWC_SEP22_Q05]

1. A and B only [Option ID = 19417]
2. C and D only [Option ID = 19418]
3. D and A only [Option ID = 19419]
4. B and D only [Option ID = 19420]

6) Match List I with List II

List I	List II
A. Design of diversion drain	I. 1st stage of gully development
B. Enlargement of gully head	II. 3rd stage of gully development
C. No appreciable erosion	III. 2nd stage of gully development
D. Deepening of gully bed	IV. Grassed waterway

Choose the correct answer from the options given below:

[Question ID = 4856][Question Description = 106_65_SWC_SEP22_Q06]

1. A-IV, B-III, C-II, D-I [Option ID = 19421]
2. A-I, B-III, C-II, D-IV [Option ID = 19422]
3. A-IV, B-II, C-III, D-I [Option ID = 19423]
4. A-II, B-III, C-IV, D-I [Option ID = 19424]

7) Match List I with List II

List I	List II
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A. Hydrologic design	I. Dimension of structure for runoff handling
B. Hydraulic design	II. Estimation of runoff
C. Structural design	III. Sliding
D. Failure of head wall	IV. Dimension of components

Choose the correct answer from the options given below:

[Question ID = 4857][Question Description = 107_65_SWC_SEP22_Q07]

1. A - I, B - II, C - IV, D - III [Option ID = 19425]
2. A - II, B - I, C - IV, D - III [Option ID = 19426]
3. A - I, B - II, C - III, D - IV [Option ID = 19427]
4. A - II, B - I, C - III, D - IV [Option ID = 19428]

8) Match List I with List II

List I	List II
A. Hydraulic ram	I. Counterweight on the beam
B. Archimedian screw	II. Iron washers
C. Don	III. Andhra Pradesh
D. Chain pump	IV. Hilly area

Choose the correct answer from the options given below:

[Question ID = 4858][Question Description = 108_65_SWC_SEP22_Q08]

1. A - IV, B - II, C - I, D - III [Option ID = 19429]
2. A - IV, B - III, C - I, D - II [Option ID = 19430]
3. A - II, B - III, C - I, D - IV [Option ID = 19431]
4. A - III, B - IV, C - II, D - I [Option ID = 19432]

9) Match List I with List II

List I	List II
A. Specific speed	I. Centrifugal pump
B. Constant discharge	II. Geometrically similar pump
C. Well characteristics curve	III. Positive displacement pump
D. Performance curve	IV. Discharge vs drawdown relation

Choose the correct answer from the options given below:

[Question ID = 4859][Question Description = 109_65_SWC_SEP22_Q09]

1. A - IV, B - II, C - III, D - I [Option ID = 19433]
2. A - I, B - II, C - III, D - IV [Option ID = 19434]
3. A - II, B - III, C - IV, D - I [Option ID = 19435]
4. A - I, B - II, C - IV, D - III [Option ID = 19436]

10) The characteristics curves of centrifugal pump show the inter-relationship between

- A. Capacity vs head
- B. Head vs power
- C. Capacity vs efficiency
- D. Capacity vs power

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

[Question ID = 4860][Question Description = 110_65_SWC_SEP22_Q10]

1. A, B and C only [Option ID = 19437]
2. A, B and D only [Option ID = 19438]
3. B, C and D only [Option ID = 19439]
4. A, C and D only [Option ID = 19440]

11) Centrifugal pumps are classified based on

- A. Type of energy conversion and number of stages
- B. Type of suction inlet and impeller types
- C. Construction of casing
- D. Axis of rotation and method of drive
- E. Type of foundation and specific yield

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

[Question ID = 4861][Question Description = 111_65_SWC_SEP22_Q11]

1. A, B, C and E only [Option ID = 19441]
2. A, B, D and E only [Option ID = 19442]
3. A, C, D and E only [Option ID = 19443]
4. A, B, C and D only [Option ID = 19444]

12) The quality of irrigation water is generally judged by its

- A. Total salt concentration
- B. Relative proportion of cations
- C. Contents of bicarbonates and boron
- D. Test and colour

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

[Question ID = 4862][Question Description = 112_65_SWC_SEP22_Q12]

1. A, B and D only [Option ID = 19445]
2. C, D and B only [Option ID = 19446]
3. A, B and C only [Option ID = 19447]
4. A, C and D only [Option ID = 19448]

13) Excessive soil salinity and alkalinity may adversely affect the plant growth by

- A. Increasing the osmotic pressure in the soil solution
- B. Accumulating certain ions in toxic concentrations in the plant tissue
- C. By altering the plant's mineral-nutritional characteristics
- D. Increase in the rate of photosynthesis of plant

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

[Question ID = 4863][Question Description = 113_65_SWC_SEP22_Q13]

1. A, B and C only [Option ID = 19449]
2. A, B and D only [Option ID = 19450]
3. B, C and D only [Option ID = 19451]
4. A, C and D only [Option ID = 19452]

14) Poor quality of irrigation water can be improved by following management practices

- A. Improvement of sodium and bicarbonate rich water by gypsum application
- B. Choice of salt tolerant crops and their varieties and proper irrigation management
- C. Optimum fertilization and manuring
- D. Maintaining the shallow ground water table in the root zone of the crop

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

[Question ID = 4864][Question Description = 114_65_SWC_SEP22_Q14]

1. A, B and D only [Option ID = 19453]
2. C, D and B only [Option ID = 19454]
3. A, B and C only [Option ID = 19455]
4. C, D and A only [Option ID = 19456]

15) In the land leveling the cut-fill ratio usually varies from [Question ID = 4865][Question Description = 115_65_SWC_SEP22_Q15]

1. 0.8 to 1.6 [Option ID = 19457]
2. 1.2 to 1.6 [Option ID = 19458]
3. 1.4 to 1.8 [Option ID = 19459]
4. 1.5 to 1.8 [Option ID = 19460]

16) Recommended length of run for border and furrow method of irrigation in clay loam soil is

[Question ID = 4866][Question Description = 116_65_SWC_SEP22_Q16]

1. 60-120 m [Option ID = 19461]
2. 100-180 m [Option ID = 19462]

3. 150-300 m [Option ID = 19463]
4. 200-400 m [Option ID = 19464]

17) Which method of land leveling is frequently employed by many experienced survey workers[Question ID = 4867]
[Question Description = 117_65_SWC_SEP22_Q17]

1. Plain method [Option ID = 19465]
2. Profile method [Option ID = 19466]
3. Plan inspection method [Option ID = 19467]
4. Contour adjustment method [Option ID = 19468]

18) Given below are two statements

Statement I: Darcy's law is used in studying ground water flow in alluvial formations.

Statement II: Darcy's law, however, is not valid for studying the movement of ground water in case of aquifers in hard rock area and immediate vicinity of wells where steep hydraulic gradients exist as in these situations the flow does not remain laminar.

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

[Question ID = 4868][Question Description = 118_65_SWC_SEP22_Q18]

1. Both Statement I and Statement II are correct [Option ID = 19469]
2. Both Statement I and Statement II are incorrect [Option ID = 19470]
3. Statement I is correct but Statement II is incorrect [Option ID = 19471]
4. Statement I is incorrect but Statement II is correct [Option ID = 19472]

19) Match List I with List II

List I	List II
A. Unconfined aquifer	I. Piezometric level
B. Confined aquifer	II. Hydraulic resistance
C. Semi-confined aquifer	III. Special case of unconfined aquifer
D. Perched water table	IV. Water table level

Choose the correct answer from the options given below:

[Question ID = 4869][Question Description = 119_65_SWC_SEP22_Q19]

1. A - IV, B - I, C - II, D - III [Option ID = 19473]
2. A - I, B - IV, C - II, D - III [Option ID = 19474]
3. A - IV, B - I, C - III, D - II [Option ID = 19475]
4. A - I, B - IV, C - III, D - II [Option ID = 19476]

20) Given below are two statements

Statement I: The choice of contour or graded bunds and the grade to be given to the bunds depend upon rainfall and soil conditions.

Statement II: In low rainfall areas where moisture is limiting factor for crop production, bunds on the strict contour may not be adopted.

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

[Question ID = 4870][Question Description = 120_65_SWC_SEP22_Q20]

1. Both Statement I and Statement II are correct [Option ID = 19477]
2. Both Statement I and Statement II are incorrect [Option ID = 19478]
3. Statement I is correct but Statement II is incorrect [Option ID = 19479]
4. Statement I is incorrect but Statement II is correct [Option ID = 19480]

21) Match List I with List II

List I	List II
A. Distinction between confined and unconfined aquifer	I. Changes with quantity of water being pumped
B. Practical applicability of discharge equation in unconfined aquifer	II. Specific yield
C. Pumping water level	III. Adolph Thiem
D. Yield per unit drawdown	IV. Dupuit

Choose the correct answer from the options given below:

[Question ID = 4871][Question Description = 121_65_SWC_SEP22_Q21]

1. A - III, B - IV, C - I, D - II [Option ID = 19481]
2. A - IV, B - III, C - I, D - II [Option ID = 19482]

3. A - IV, B - III, C - II, D - I [Option ID = 19483]
4. A - III, B - IV, C - II, D - I [Option ID = 19484]

22) Which conservation measures are NOT under engineering measures?

- A. Contour and Graded bunding
- B. Broad based terraces
- C. Contour cultivation
- D. Wind strip cropping

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

[Question ID = 4872][Question Description = 122_65_SWC_SEP22_Q22]

1. A and B only [Option ID = 19485]
2. B and C only [Option ID = 19486]
3. C and D only [Option ID = 19487]
4. A and D only [Option ID = 19488]

23) Which two assumptions are known as Dupuit assumptions?

- A. The aquifer is homogeneous and isotropic
- B. The flow is laminar and Darcy's law is applicable
- C. The flow is horizontal and uniform everywhere in the vertical section
- D. The hydraulic gradient is given by the slope of the drawdown curve

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

[Question ID = 4873][Question Description = 123_65_SWC_SEP22_Q23]

1. A and B only [Option ID = 19489]
2. B and C only [Option ID = 19490]
3. C and D only [Option ID = 19491]
4. A and D only [Option ID = 19492]

24) Which well drilling methods are under rotary drilling?

- A. Direct circulation hydraulic drilling
- B. Reverse circulation hydraulic drilling
- C. Mechanical drilling with power rigs
- D. Core drilling

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

[Question ID = 4874][Question Description = 124_65_SWC_SEP22_Q24]

1. A and B only [Option ID = 19493]
2. B and C only [Option ID = 19494]
3. C and D only [Option ID = 19495]
4. A and D only [Option ID = 19496]

25) Given below are two statements

Statement I: The principle to be adopted in spacing the bunds are (i) the seepage zone below the upper bund should not meet the saturation zone of the lower bund.

Statement II: The bunds should check the water at a point when water attains the erosive velocity and the bund should not create inconvenience to agricultural operations.

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

[Question ID = 4875][Question Description = 125_65_SWC_SEP22_Q25]

1. Both Statement I and Statement II are correct [Option ID = 19497]
2. Both Statement I and Statement II are incorrect [Option ID = 19498]
3. Statement I is correct but Statement II is incorrect [Option ID = 19499]
4. Statement I is incorrect but Statement II is correct [Option ID = 19500]

26) Which of the statements are not correct for hydraulic jump in a channel cross section?

- A. The discharge remains constant
- B. The specific energy remains constant
- C. The specific force remains constant
- D. The Velocity of flow remains constant
- E. The depth of flow remains constant

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

[Question ID = 4876][Question Description = 126_65_SWC_SEP22_Q26]

1. A, B and D only [Option ID = 19501]
2. A, C and D only [Option ID = 19502]
3. C, D and E only [Option ID = 19503]
4. B, D and E only [Option ID = 19504]

27) Which of the following flow measuring method/ device uses the principle of critical flow section?

- A. Weir
- B. Parshal Flume
- C. Current meter
- D. Velocity - Area method
- E. Orifice

[Question ID = 4877][Question Description = 127_65_SWC_SEP22_Q27]

1. A, B and C only [Option ID = 19505]
2. B, C and D only [Option ID = 19506]
3. A, B and E only [Option ID = 19507]
4. B, D and E only [Option ID = 19508]

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

Assertion A : Only one head measurement is sufficient for estimating the discharge capacity through a critical flow section.

Reason R : In a critical flow section, the discharge is directly proportional to head of flow.

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

[Question ID = 4878][Question Description = 128_65_SWC_SEP22_Q28]

1. Both A and R are true and R is the correct explanation of A [Option ID = 19509]
2. Both A and R are true but R is NOT the correct explanation of A [Option ID = 19510]
3. A is true but R is false [Option ID = 19511]
4. A is false but R is true [Option ID = 19512]

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

Assertion A : A rectangular channel would be hydraulically efficient if width of channel is 2 m, depth of flow is 1 m and discharge rate is $1.5 \text{ m}^3 \text{ s}^{-1}$

Reason R : For a hydraulic efficient rectangular channel, the discharge rate should be numerically 1.5 times of the flow depth.

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

[Question ID = 4879][Question Description = 129_65_SWC_SEP22_Q29]

1. Both A and R are true and R is the correct explanation of A [Option ID = 19513]
2. Both A and R are true but R is NOT the correct explanation of A [Option ID = 19514]
3. A is true but R is false [Option ID = 19515]
4. A is false but R is true [Option ID = 19516]

30) Which efficiency is increased with the lining of irrigation canal ?

[Question ID = 4880][Question Description = 130_65_SWC_SEP22_Q30]

1. Irrigation Efficiency [Option ID = 19517]
2. Conveyance Efficiency [Option ID = 19518]
3. Water Application Efficiency [Option ID = 19519]
4. Water Distribution Efficiency [Option ID = 19520]

31) If the flow rate of a irrigation channel is increased, which of the statement is true for specific energy curve?[Question ID = 4881][Question Description = 131_65_SWC_SEP22_Q31]

1. It will be moving away from the origin [Option ID = 19521]
2. It will be moving nearer to the origin [Option ID = 19522]
3. There will be no change to the specific energy curve [Option ID = 19523]
4. The specific energy curve would be closer to $E=h$ line [Option ID = 19524]

32) What would be the pore space in % for a soil whose particle density is 2.4 g cm^{-3} and bulk density is 1.5 g cm^{-3} ?

[Question ID = 4882][Question Description = 132_65_SWC_SEP22_Q32]

1. 37.5 [Option ID = 19525]
2. 47.5 [Option ID = 19526]
3. 62.5 [Option ID = 19527]
4. 65.5 [Option ID = 19528]

33) 1.5 cm of irrigation water was applied to an area of 1 acre of land. The irrigation water was distributed only in the top 20 cm soil. What would be the increase in gravimetric water content of soil if the bulk density of soil is 1.5 g cm^{-3} ?

[Question ID = 4883][Question Description = 133_65_SWC_SEP22_Q33]

1. 2.5% [Option ID = 19529]
2. 5% [Option ID = 19530]
3. 7.5% [Option ID = 19531]
4. 10 % [Option ID = 19532]

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

Assertion A : The Crop water requirement is dependent on the Agroclimatic region of the location.

Reason R : The growth of crop is different for different agroclimatic zones.

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

[Question ID = 4884][Question Description = 134_65_SWC_SEP22_Q34]

1. Both A and R are true and R is the correct explanation of A
[Option ID = 19533]
2. Both A and R are true but R is NOT the correct explanation of A
[Option ID = 19534]
3. A is true but R is false
[Option ID = 19535]
4. A is false but R is true
[Option ID = 19536]

35) For calculating NET irrigation requirement (NIR), the following data are given. Which of the data are required for calculating NIR?

- A. Moisture content at field capacity (%)
- B. Moisture content before irrigation (%)
- C. Bulk density of soil
- D. Particle density of soil
- E. Depth of soil
- F. Permanent wilting point
- G. Field Efficiency of irrigation system

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

[Question ID = 4885][Question Description = 135_65_SWC_SEP22_Q35]

1. A, B, D, F and G only [Option ID = 19537]
2. B, C, D and F only [Option ID = 19538]
3. A, C, F and G only [Option ID = 19539]
4. A, B, C and E only [Option ID = 19540]

36) Arrange the following soils in ascending order of total available water to plants.

- A. Silt Loam

- B. Peat
- C. Coarse Sand
- D. Clay
- E. Loam

Choose the *correct* answer from the options given below

[Question ID = 4886][Question Description = 136_65_SWC_SEP22_Q36]

1. B, D, E, A, C [Option ID = 19541]
2. D, A, E, C, B [Option ID = 19542]
3. C, D, E, A, B [Option ID = 19543]
4. A, C, E, D, B [Option ID = 19544]

37) Which Evapotranspiration measurement method is fit for arid regions?

[Question ID = 4887][Question Description = 137_65_SWC_SEP22_Q37]

1. Modified penman method [Option ID = 19545]
2. Pemman-Monteith method [Option ID = 19546]
3. Radiation method [Option ID = 19547]
4. Blaney-Criddle method [Option ID = 19548]

38) Which of the following materials are used as ingredients for root medium in green house?

- A. Soil
- B. Sphagnummoss Peat
- C. Vermiculite
- D. Perlite

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

[Question ID = 4888][Question Description = 138_65_SWC_SEP22_Q38]

1. A, B and C only [Option ID = 19549]
2. A, C and D only [Option ID = 19550]
3. B, C, and D only [Option ID = 19551]
4. A, B, C and D [Option ID = 19552]

39) The Photosynthetic Active Radiation ranges between[Question ID = 4889][Question Description = 139_65_SWC_SEP22_Q39]

1. 400 to 500 nanometer [Option ID = 19553]
2. 300 to 500 nanometer [Option ID = 19554]
3. 400 to 700 nanometer [Option ID = 19555]
4. 600 to1000 nanometer [Option ID = 19556]

40) Statement I: The solarium is a type of green house arrangement to trap heat energy

Statement II: The solarization is a technique used to disinfect soil thorough solar energy

Choose the correct anwer

[Question ID = 4890][Question Description = 140_65_SWC_SEP22_Q40]

1. Statement I is correct but statement II is false [Option ID = 19557]
2. Statement II is correct but statement I is false [Option ID = 19558]
3. Both the statement are correct [Option ID = 19559]
4. Both the statement are false [Option ID = 19560]

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

Assertion A : Fan Pad cooling system is not effective in high humid regions.

Reason R : Evaporation is less in high humid regions.

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

[Question ID = 4891][Question Description = 141_65_SWC_SEP22_Q41]

1. Both A and R are true and R is the correct explanation of A [Option ID = 19561]
2. Both A and R are true but R is NOT the correct explanation of A [Option ID = 19562]
3. A is true but R is false [Option ID = 19563]
4. A is false but R is true [Option ID = 19564]

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

Assertion A : The Drainage density in a well-forested basin is comparatively low

Reason R : Low drainage density is due to high interception losses

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

[Question ID = 4892][Question Description = 142_65_SWC_SEP22_Q42]

1. Both A and R are true and R is the correct explanation of A [Option ID = 19565]
2. Both A and R are true but R is NOT the correct explanation of A [Option ID = 19566]
3. A is true but R is false [Option ID = 19567]
4. A is false but R is true [Option ID = 19568]

43) The annual rainfall depths at a location for the duration 1995 to 2020 (including both the years) are available. What will be the return period for the highest rainfall magnitude of the series using Weibull's formula?[Question ID = 4893]

[Question Description = 143_65_SWC_SEP22_Q43]

1. 20 years [Option ID = 19569]
2. 25 years [Option ID = 19570]
3. 26 years [Option ID = 19571]
4. 27 years [Option ID = 19572]

44) The heights of three bars in a hyetograph of a 6-hour storm are 20, 50, and 25 cm h⁻¹ respectively. If the catchment area of the watershed is 1 hectare, how much will be the rainfall volume (m³) during the storm over the watershed?

[Question ID = 4894][Question Description = 144_65_SWC_SEP22_Q44]

1. 19×10^2 [Option ID = 19573]
2. 19×10^3 [Option ID = 19574]
3. 95×10^2 [Option ID = 19575]
4. 95×10^3 [Option ID = 19576]

45) Which of the following statements are correct for a synthetic unit hydrograph (SUH)?

- A. It is derived from empirical equations
- B. It considers hydrograph and basin characteristics
- C. It is derived for areas with no gauged data
- D. It considers basin characteristics only

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

[Question ID = 4895][Question Description = 145_65_SWC_SEP22_Q45]

1. A, B and C only [Option ID = 19577]
2. B, C and D only [Option ID = 19578]
3. A, B and D only [Option ID = 19579]
4. A, C and D only [Option ID = 19580]

46) The following data were measured while using area-velocity method of stream gauging. The first and second segment widths were 2 m and 4 m respectively, whereas flow depth was 4 m. How much will be the flow cross sectional area of the first segment ?[Question ID = 4896][Question Description = 146_65_SWC_SEP22_Q46]

1. 8 m² [Option ID = 19581]
2. 16 m² [Option ID = 19582]
3. 24 m² [Option ID = 19583]
4. 32 m² [Option ID = 19584]

47) Match List I with List II

List I	List II
Types of streams	Characterisitcs
A. Effluent stream	I. It flows year round
B. Intermittent stream	II. It carries water only immediately after rainfall
C. Perennial stream	III. It only flows for a portion of the year
D. Influent stream	IV. It gets its water supply from groundwater
E. Ephemeral stream	V. It provides water supply to groundwater

Choose the correct answer from the options given below:

[Question ID = 4897][Question Description = 147_65_SWC_SEP22_Q47]

1. A - V, B - III, C - II, D - I, E - IV [Option ID = 19585]
2. A - II, B - I, C - IV, D - V, E - III [Option ID = 19586]
3. A - IV, B - III, C - I, D - V, E - II [Option ID = 19587]
4. A - III, B - IV, C - V, D - II, E - I [Option ID = 19588]

48) Bio-drainage refers to the reduction of water table with the help of

[Question ID = 4898][Question Description = 148_65_SWC_SEP22_Q48]

1. Field Crops [Option ID = 19589]
2. Animals [Option ID = 19590]
3. Trees [Option ID = 19591]
4. Microbes [Option ID = 19592]

49) Which of the below statements are assumed to derive Hooghoudt's Equation?

- A. The Soil is homogeneous
- B. Darcy's Law is valid for the flow
- C. The Reynold's number should be more than 1
- D. The hydraulic gradient at any point is equal to the slope of the water table above that point
- E. The water flows from all directions to the drain

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

[Question ID = 4899][Question Description = 149_65_SWC_SEP22_Q49]

1. A, B and D only [Option ID = 19593]
2. B, C and E only [Option ID = 19594]
3. C, D and E only [Option ID = 19595]
4. A, D and E only [Option ID = 19596]

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

Assertion A : Sodium : Calcium in irrigation water should not be more than 3:1

Reason R : Excessive Sodium in irrigation water would cause soil dispersion and structural breakdown

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

[Question ID = 4900][Question Description = 150_65_SWC_SEP22_Q50]

1. Both A and R are true and R is the correct explanation of A [Option ID = 19597]
2. Both A and R are true but R is NOT the correct explanation of A [Option ID = 19598]
3. A is true but R is false [Option ID = 19599]
4. A is false but R is true [Option ID = 19600]