ICAR AIEEA PG

QUESTION PAPER



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PREVIEW QUESTION BANK

Module Name : WATER SCIENCE AND TECHNOLOGY-ENG
Exam Date : 29-Jun-2024 Batch : 10:00-12:00

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Negative Marks
Objective Question				
1	200001	The optimum temperature (^{0}C) for germination of wheat is 1. 8-10 2. 12-15 3. 20-22 4. 24-26 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
2	200002	Wheat varieties with initial HD are developed by 1. ICAR – IARI, New Delhi 2. ICAR – IIWBR, Karnal 3. CCSHAU, Hisar 4. PAU, Ludhiana A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
3	200003	Groundnut is also known as 1. Peanut 2. Chest nut 3. Pea 4. Chickpea A1 : 1 A2 : 2	4.0	1.00

		A3 : 3 A4 : 4		
Objective Question				
4	200004	Which of the following planting method is not related to sugarcane crop? 1. Ring pit method 2. Double transplanting 3. Partha method 4. Seblang method A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
5	200005	Read the following statements about ICAR Institutes. (A). ICAR – Indian Institute of Sugarcane Research is located at Lucknow (B). ICAR- Indian Institute of Pulses Research is located in Hyderabad (C). ICAR- Central Research Institute for Dryland Agriculture is located at Jodhpur (D). ICAR- Indian Institute for Soybean Research is located at Indore (E). ICAR- Indian Institute of Water Management is located at Bhubaneswar Choose the ***correct*** answer from the options given below: 1. (A), (B) and (D) only 2. (A), (D) and (E) only 3. (A), (B), (C) and (D) only 4. (B), (C) and (E) only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
6	200006		4.0	1.00

		Which of the following disease in sugarcane is caused by Colletorichum falcatum 1. Smut 2. Wilt 3. Grassy shoot 4. Red rot A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
7	200007	Which of the following is a stem nodulating green manure crop? 1. *Sesbania aculeata* 2. *Crotalaria juncea* 3. *Sesbania rostrata* 4. *Vigna unguiculata* A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
8	200008	Purple orange colour of older leaves is due to the deficiency of 1. Nitrogen 2. Phosphorus 3. Potassium 4. Calcium A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
9	200009		4.0	1.00

		The rotational intensity for rice – potato – fallow system will be 1. 100% 2. 150% 3. 200% 4. 300% A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
10	200010	Read the following statements about black soils (A). These have dark colour. (B). These have high clay content. (C). These have low CEC. (D). These are rich in organic matter and nitrogen. (E). These are normally suitable for cultivation of cotton. Choose the ***correct*** answer from the options given below: 1. (A), (B), (D) and (E) only. 2. (A), (B) and (E) only. 3. (A), (B), (C) and (D) only. 4. (B), (C) and (D) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
11	200011		4.0	1.00

		Given below are two statements: Statement (I): The total number of land capability classes are nine. Statement (II): Land capability classes from I to IV are suitable for arable land use. In light of the above statements, choose the *most appropriate* answer from the options given below 1. Both Statement (I) and Statement (II) are correct. 2. Both Statement (I) and Statement (II) are incorrect. 3. Statement (I) is correct but Statement (II) is incorrect. 4. Statement (I) is incorrect but Statement (II) is correct. A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
12	200012	As per Land Capability Classification, which land capability class can not be put under arable land use and agro-forestry system 1. VI 2. V 3. IX 4. VII A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
13	200013	Who among the followings is also the Secretary, DARE? 1. Director, ICAR – IARI 2. DDG crops, ICAR 3. DG, ICAR 4. DDG Education, ICAR A1 : 1 A2 : 2 A3 : 3	4.0	1.00

		A4 : 4		
Objective Question				
14	200014	Rice dwarfing disease is caused by 1. Virus 2. Bacteria 3. Nutrient deficiency 4. Nematode A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
15	200015	"Blossom End Rot" in tomato is due to deficiency of 1. Fe 2. N 3. Ca 4. P A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
16	200016		4.0	1.00

		Which of followings are classified as nitrification inhibitor (A). AM (B). CDU (C). IBDU (D). N-serve (E). Nitrapyrin Choose the ***correct*** answer from the options given below: 1. (A), (B) and (D) only 2. (A), (D) and (E) only 3. (A), (C) and (D) only 4. (B), (C) and (E) only A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
17	200017	ATARI for zone-I is located at 1. New Delhi 2. Kanpur 3. Lucknow 4. Ludhiana A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
18	200018		4.0	1.00

Exposure to monochromatic light i.e. wavelength greater than 680nm in red zone that cause reduction in yield is

(A). Red drop

(B). Emersons effect

(C). Enhancement effect

(D). Inversion effect

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

19	200019	The 1st phase of respiration in which carbohydrates are used up 1. Floating respiration 2. Protoplasmic respiration 3. Mitochondrial respiration 4. ER respiration A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

20	200020	Kreb's Cycle is 1. Endothermic and oxidation 2. Exothermic and reduction 3. Endothermic and reduction 4. Exothermic and oxidation A1 : 1 A2 : 2	4.0	1.00

A3 : 3

A4 : 4

Objective Question

21	200021	Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R). Assertion (A) : Respiration quotient of protein is 0.8 to 0.9. Reason (R) : Respiration quotient is less than 1 as respiratory substrate is highly reduced. In light of the above statements, choose the correct answer from the options given below. 1. Both (A) and (R) are true and (R) is the correct explanation of (A). 2. Both (A) and (R) are true but (R) is NOT the correct explanation of (A). 3. (A) is true but (R) is false. 4. (A) is false but (R) is true. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

22	200022	Membrane bound organelles of a cell include (A) Endoplasmic reticulum (B). Ribosomes (C). Lysosomes (D). Mitochondria Choose the ***correct*** answer from the options given below: 1. (A), (B) and (D) only. 2. (A), (C) and (D) only. 3. (A), (B), (C) and (D). 4. (B), (C) and (D) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

23	200023	In which stage of mitosis ,Centromere in chromosomes divide and comes in 'V' shaped ? 1. Prophase 2. Anaphase 3. Metaphase 4. Telophase A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
24	200024	Match **List-I** with **List-II** **List-I** / **List-II** (A) Dominant epistasis / (I). 13:3 (B). Inhibitory gene action / (II). 12:3:1 (C). Duplicate epistasis / (III). 15:1 (D). Complementary gene action / (IV). 9:7 Choose the **correct** answer from the options given below: 1. (A) - (I), (B) - (II), (C) - (III), (D) - (IV) 2. (A) - (I), (B) - (IV), (C) - (II), (D) - (III) 3. (A) - (II), (B) - (I), (C) - (III), (D) - (IV) 4. (A) - (III), (B) - (IV), (C) - (I), (D) - (II) A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
25	200025		4.0	1.00

		The best method of propagation for Mango in Northern India is 1. Layering 2. Veneer grafting 3. Patch grafting 4. Hand wood cutting A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
26	200026	The total utilizable water resources of India is.....BCM 1. 433 2. 690 3. 1123 4. 1869 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
27	200027	Which of the following river basin has maximum utilizable surface water resources? 1. Godavari 2. Krishna 3. Narmada 4. Mahanadi A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
28	200028		4.0	1.00

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

List-I Project	**List-II River**
(A). Nagarjuna Sagar	(I). Godavari
(B). Hirakud	(II). Chambal
(C). Gandhi Sagar	(III). Krishna
(D). Jayakawadi	(IV). Mahanadi

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

29	200029	Boiling method can be used to remove.....of water. 1. Temporary hardness 2. Permanent hardness 3. Both temporary and permanent hardness 4. Neither temporary nor permanent hardness A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

30	200030		4.0	1.00

		The treaty on sharing water of Ganga at Farraka barrage in 1996 was executed between India and ..... 1. China 2. Pakistan 3. Bangladesh 4. Nepal A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
31	200031	The specific heat of water is approximately..... 1. 4.2 J/kg/K 2. 4.2 J/g/K 3. 1 J/kg/K 4. 1 J/g/K A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
32	200032	The dielectric constant of water is..... 1. 0 2. 20 3. 40 4. 80 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
33	200033		4.0	1.00

		Water molecule in liquid state forms.....charged structure. 1. Tetrahedral 2. Hexagonal 3. Planner 4. Cuboidal A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
34	200034	Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R). Assertion (A) : The water molecule is highly polar in nature. Reason (R) : Water molecule has bent structure. In light of the above statements, choose the correct answer from the options given below. 1. Both (A) and (R) are true and (R) is the correct explanation of (A). 2. Both (A) and (R) are true but (R) is NOT the correct explanation of (A). 3. (A) is true but (R) is false. 4. (A) is false but (R) is true. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
35	200035	What should be the count of E. coli in any sample of 100 ml of drinking water ? 1. 0 2. 10 3. 50 4. 100 A1 : 1 A2 : 2 A3 : 3	4.0	1.00

		A4 : 4		
Objective Question				
36	200036	Which of the portion of the precipitation reaches the stream channel, by a variety of paths above and below the surface of the earth ? 1. Streamflow 2. Runoff 3. Infiltration 4. Overland flow A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
37	200037	A watershed has an area of 600 ha. Due to a 10 cm rainfall event over the watershed a streamflow is generated and at the outlet of the watershed it lasts for 10 hours. Assuming a runoff/rainfall ratio of 0.2 for this event, the average stream flow rate at the outlet in this period of 10 hours is 1. 1,20,000 m^3/h 2. 200 m^3/minute 3. 33.33 m^3/s 4. 2.66 m^3/s A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
38	200038	The frozen rain drops while falling through air at subfreezing temperature is known as 1. Glaze 2. Hail 3. Sleet 4. Snow A1 : 1 A2 : 2 A3 : 3	4.0	1.00

A4 : 4

Objective Question

39 200039 4.0 1.00

Which of the following raingauge records the cumulative precipitation?

1. Symon's
2. Tipping Bucket
3. Float type
4. Weighing type

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

40 200040 4.0 1.00

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

List-I	**List-II**
Rainfall-runoff relations	**Area**
(A) Binnie's percentage table	(I). Bombay-Deccan catchment
(B) Strange's curves and tables	(II) Uttar Pradesh
(C). Barlow's tables	(III). Madhya Pradesh
(D). Lacey's formula	(IV) Indo-Gangetic plain

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

41	200041	Following assumptions are considered related to the Rational method: (A) The rainfall intensity is uniform over the entire watershed during the duration of storm. (B) The factors pertaining to losses due to depression storage and initial infiltration were considered during the start of runoff process. (C) The factors related to retardance to flow caused by the effect of surface detention and channel storage is considered. (D) The runoff coefficient is dependent only on watershed characteristics. Choose the ***correct*** answer from the options given below: 1. (A), (B) and (D) only. 2. (A), and (D) only. 3. (B), and (C) only. 4. (B), (C) and (D) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
42	200042	Culturable command area includes (A) All land of gross command area on which cultivation is possible. (B) Pasture and fallow lands (C) Pond area (D) Reserve forest areas Choose the ***correct*** answer from the options given below: 1. (A) only. 2. (A), and (B) only. 3. (A), (B), and (C) only 4. (A), (B), (C) and (D). A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
43	200043		4.0	1.00

		Which of the followings does not belong to cross drainage works in canal command area? 1. Aqueduct 2. Super passages 3. Level crossing 4. Metering flumes A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
44	200044	For land management point of view, the size of watershed should be 1. Less than 100 ha 2. 100 ha to 500 ha 3. 500 ha to 1000 ha 4. 1000 ha to 1500 ha A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
45	200045	Which of the followings are the principles of watershed management ? (A). Utilizing the land according to its capability (B). Maintaining adequate vegetative cover (C). Increasing groundwater recharge (D). Draining out excess water with a safe velocity Choose the ***correct*** answer from the options given below: 1. (A), (B) and (C) only. 2. (B), (C) and (D) only. 3. (B) and (C). 4. (A), (B), (C) and (D) only. A1 : 1 A2 : 2	4.0	1.00

A3 : 3

A4 : 4

Objective Question

46 | 200046 | 4.0 | 1.00

Write in chronological order of development schemes of following Government programmes

(A). Drought Prone Area Programme

(B). Desert Development Programme

(C). Operational Research Projects on integrated watershed management

(D). NWDPRA

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

47 | 200047 | 4.0 | 1.00

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

List-I	**List-II**
(Spatial characteristics of watershed)	**(Scientist /organization)**
(A). Watershed delineation	(I). Bernard
(B). Watershed coding	(II). McCuen
(C). Watershed geometry	(III). Horton
(D). Stream order	(IV). AISLUS

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

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

		A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
48	200048	Which of the following is not a bed load sampler? 1. Pressure difference 2. Integrating 3. Pan 4. Basket A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
49	200049	Followings are some of the statements related to farm pond (A). Dugout ponds are the most common type of farm ponds. (B). Levee ponds are generally used in aquaculture. (C). A narrow section of valley with mild side slopes are preferable for pond site selection. (D). Simpson's rule gives more accurate capacity of pond values than the trapezoidal formula. Choose the ***correct*** answer from the options given below: 1. (A), (B) and (C) only. 2. (A), and (B) only. 3. (B), (C) and (D) only. 4. (B) and (D) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
50	200050		4.0	1.00

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

List-I	List-II
(Name of Tank)	**(Location)**
(A). Pampasaras	(I). Rajasthan
(B). Veeranum	(II). Kasargod
(C). Khadin	(III). Bellary
(D). Surangam	(IV). Tamil Nadu

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

51 | 200051 | 4.0 | 1.00

The range of 2.6-2.7 Mg m^{-3} represents the following:

1. Mean particle denstiy of most organic soils
2. Mean particle denstiy of most mineral soils
3. Mean bulk denstiy of most organic soils
4. Mean bulk denstiy of most mineral soils

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

52 | 200052 | 4.0 | 1.00

		_____ is an index of the fractional pore space in soil that relates space to the volume of solids rather than to the total volume of the soil. 1. Void ratio 2. Porosity 3. Bulk density 4. Pore size distribution A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
53	200053	A sample of moist soil with a wet mass of 1.0 kg and a volume of 0.64 liters (6.4×10^{-4} m^3) was dried in the oven and found to have a dry mass of 0.8 kg. Assuming the typical value of particle density (2650 kg/m^3) for a mineral soil, what will be the volumetric moisture content? 1. 37.5 % 2. 22.5 % 3. 31.25 % 4. 25 % A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
54	200054	What is the equivalent depth of water contained in a soil profile of 1 m deep, if the mass wetness of the upper 0.4 m is 15% and that of the lower 0.6 m is 25%? Assume a bulk density of 1200 kg/m^3 in the upper layer and 1400 kg/m^3 in the lower layer. 1. 0.072 2. 0.210 3. 0.350 4. 0.282 A1 : 1 A2 : 2 A3 : 3	4.0	1.00

		A4 : 4		
Objective Question				
55	200055	Which among the followings is the most appropriate statistical equivalent of the technique used in interpretation of soil texture from particle size data? 1. Frequency distribution 2. Mean 3. Dispersion 4. Percentile A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
56	200056	The upper limit of clay sized particles and the lower limit of gravel across both the USDA and IUSS classification systems is: (A). 0.002 mm (B). 0.005 mm (C). 5.0 mm (D). 2.0 mm Choose the ***correct*** answer from the options given below: 1. A and B only 2. B and C only 3. B and D only 4. A and D only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
57	200057		4.0	1.00

		For a saturated soil, the ratio of the rate of flux of water per unit area per unit time to the potential gradient is known as _____ 1. Saturated hydraulic conductivity 2. Permeability 3. Hydraulic head gradient 4. Fluidity A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
58	200058	Which of the following term represents an empirical measurement supposed to represent the soil profile's ability to retain water after the process of internal drainage has ceased? 1. Water holding capacity 2. Field Capacity 3. Available water capacity 4. Moisture retention capacity A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
59	200059	Which of the following is true with respect to the Stoke's Law? (A) It relates to the terminal settling velocity of particles in a viscous medium. (B) It relates the terminal settling velocity to particle radius and density. (C) It is applied in the determination of the particle size distribution. (D) It is applicable only to the spherical particles. 1. (A), (B), (C) and (D) 2. (A), (B) & (C) only 3. (B), (C) and (D) only 4. (A), (C) and (D) only. A1 : 1	4.0	1.00

		A2 : 2 A3 : 3 A4 : 4		
Objective Question				
60	200060	The proportionality factor in the Darcy's equation is known as: 1. Hydraulic gradient 2. Flux density 3. Hydraulic conductivity 4. Thermal conductivity A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
61	200061	Followings are the statements related to soil colloids. (A). Soil colloids are inorganic in nature. (B). Soil colloids are of extremely small size, so that they can not be seen with an ordinary light microscope. (C). Soil colloids exhibit a large specific surface area. (D). Soil colloids are always positively charged. Choose the ***correct*** answer from the options given below: 1. (A), (B) and (D) only. 2. (A), (B), (C) and (D). 3. (A) and (D) only. 4. (B) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
62	200062		4.0	1.00

		Which ion is the dominant ion adsorbed on clay surfaces under very acidic conditions? 1. H^+ 2. Al^{3+} 3. Ca^{2+} 4. Mg^{2+} A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
63	200063	Followings are the statements with respect to the addition of liming materials in the soils. (A). All liming materials (oxides, hydroxides or carbonates) when applied to an acid soil react with carbon dioxide and water to yield bicarbonates. (B). When applied to an acid soil, the hydrogen and aluminium in the liming materials replace the magnesium and calcium on the colloidal complex. (C). Applied carbonate and bicarbonate liming materials replace hydrogen and aluminum on the colloidal complex leading to the evolution of free carbondioxide (D). Adsorption of calcium and magensium ions raises the percentage base saturation of the colloidal complex in turn decreasing the soil pH. Choose the correct answer from the options given below: 1. B and C only 2. A and D only 3. A and B only 4. B and D only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
64	200064	Which of the following is determined using a nomograph? 1. Rainfal runoff erosivity factor (R) 2. Slope length factor (L) 3. Soil erodibility factor (K) 4. Conservation practice factor (P)	4.0	1.00

		A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
65	200065	Which of the following dispersing agent is used in determination of the particle size distribution of soils ? 1. Sodium hexametaphosphate 2. Hydrogen peroxide 3. Water 4. Hydrochloric acid A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
66	200066	The peak rate of runoff can be estimated using the 1. Soil conservation service method 2. Rational formula 3. Blaney-Criddle Method 4. Penman method A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
67	200067	The actual evapotranspiration divided by crop coefficient gives- 1. Actual evaporation 2. Potential evapotranspiration 3. Actual transpiration 4. Potential transpiration	4.0	1.00

		A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
68	200068	Which of the following is not true for cover crops? 1. Cover crops are more suited for drier areas as they compete for soil moisture. 2. Cover crops are closely planted crops solely to control erosion. 3. Cover crops are usually planted for protection when regular crops are off the land. 4. They may be planted in strips or between rows to provide protection for vegetables or other crops highly susceptible for abrasive injury in the seedling stage. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
69	200069	Which one of the following soil type – steady state infiltration rate combination is incorrect? 1. Sands - > 20 mm hr^{-1} 2. Loams - 5-10 mm hr^{-1} 3. Clayey soils – 1.5 mm hr^{-1} 4. Sodic clayey soils - > 20 mm hr^{-1} A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
70	200070	Which one of the following describes most appropriately the process of infiltration? 1. Downward movement of water in the soil profile 2. Downward entry of water in the soil 3. The process of water entry into the soil 4. Flow of water in the underground aquifers A1 : 1	4.0	1.00

		A2 : 2 A3 : 3 A4 : 4		
Objective Question				
71	200071	Which one of the following crops has maximum water requirement? 1. Maize 2. Rice 3. Wheat 4. Sorghum A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
72	200072	The fundamental principle of evaporation from a free surface is a 'function of the difference in the vapour pressure of water and vapour pressure of air' was given by..... 1. Dalton 2. Thronthwaite 3. Penman 4. Jensen A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
73	200073		4.0	1.00

		The process of respiration in plants generally takes place in A. Chloroplast B. Mitochondria C. Cytoplasm D. Grana 1. (A) and (B) only 2. (A) and (D) only 3. (B) and (C) only 4. (A), (B) and (C) only A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
74	200074	Which one of the following stage has the maximum crop coefficient (Kc) value for Watermelon? 1. Initial stage 2. Mid season stage 3. Late season stage 4. Uniform throughout the growth stages A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
75	200075		4.0	1.00

		The term "Delta" used for irrigation practice can be expressed as..... (A). cm (B). cm/hr (C). Poise (D). Lux Choose the ***correct*** answer from the options given below: 1. (A) only 2. (B) only 3. (A) and (C) only 4. (C) and (D) only A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
76	200076	Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R). Assertion (A) : In strip cropping both close growing and row crops are planted in alternate strips in the same field. Reason (R) : In comparison to contour farming, strip cropping is a more effective method to control erosion. In light of the above statements, choose the *most appropriate* answer from the options given below : 1. Both (A) and (R) are correct and (R) is the correct explanation of (A). 2. Both (A) and (R) are correct but (R) is NOT the correct explanation of (A). 3. (A) is correct but (R) is not correct. 4. (A) is not correct but (R) is correct. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
77	200077		4.0	1.00

		Which of the followings is not a sub-surface tillage implement? 1. Tillers with ft-shaped sweeps 2. Straight blade tiller 3. Rod-weeder tiller 4. Lister A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
78	200078	If 24-hour excess rainfall to be impounded in 1m width of land between two consecutive contour bunds with a vertical interval of 2 m is 1 cm, then what will be the depth of impounding near bund? 1. 5 cm 2. 10 cm 3. 15 cm 4. 20 cm A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
79	200079	Followings are some of the statements related to drop spillway (A). Drop spillway should be located on a reasonable straight section of channel with no upstream and downstream curves within 50 m reach of the structure. (B). Transverse sill create a hydraulic jump at the toe of the structure. (C). Longitudinal sill helps to straighten the flow. (D). The cutoff wall depth should be sufficient to increase uplift pressure and reduce piping under the structure. Choose the ***correct*** answer from the options given below: 1. (A), (B) and (C) only. 2. (B) and (C) only. 3. (B), (C) and (D) only. 4. (A), (B), (C) and (D). A1 : 1	4.0	1.00

		A2 : 2 A3 : 3 A4 : 4		
Objective Question				
80	200080	Which of the following stream bank control measure is used especially when stream takes a sharp bend and bed scour is not deep ? 1. Revetment 2. Sodding 3. Brushwood edging 4. Brushwood rollers A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
81	200081	According to the Bernoulli's Theorem the sum of pressure head, velocity head, and potential head is _____ 1. Zero 2. Constant 3. One 4. Indeterminate A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
82	200082	What is the nature of the roots of the quadratic equation $X^2-6X+9=0$ 1. Real and distinct 2. Real and equal 3. Complex 4. Imaginery A1 : 1	4.0	1.00

		A2 : 2 A3 : 3 A4 : 4		
Objective Question				
83	200083	The discharge through a trapezoidal channel is maximum when 1. $b = 2d \tan \Phi/2$ 2. $d = 2b \tan \Phi/2$ 3. $d = 2b$ 4. $b = 2d$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
84	200084	Which factor affects the surface tension of a liquid? 1. Specific volume 2. Viscosity 3. Density 4. Temperature A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
85	200085		4.0	1.00

		Which of the following statement(s) is/are correct (A). In designing field channels, the flow is considered to be uniform at the maximum discharge. (B). Flows in lined irrigation channel tend to be steady. (C). Flows in lined irrigation channel tends to be steady and uniform. (D). In a channel of changing cross-section, the flow is non-uniform. 1. (A) and (C) only 2. (A) and (D) only 3. (B), (C) and (D) only 4. (A), (B) and (D) only A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
86	200086	The hydraulic radius in channel _____ with _____ in wetted perimeter for a given cross-sectional area 1. increases, increase 2. decreases, decrease 3. decreases, increase 4. remains constant, increase A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
87	200087	In a frequency distribution, the value that occurs most frequently is called the_____. 1. Mean 2. Median 3. Mode 4. Range A1 : 1 A2 : 2 A3 : 3	4.0	1.00

A4 : 4

Objective Question

88 | 200088 | 4.0 | 1.00

In a dataset of 10 numbers, if the mean and median are both 20, which of the following statements is/are true?

(A). The dataset contains no outliers.

(B). The dataset contains exactly one outlier.

(C). The dataset contains multiple outliers.

(D). The dataset has no mode.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

89 | 200089 | 4.0 | 1.00

Which of the following formula is used to calculate the hydrostatic pressure at a given depth in a fluid?

1. P = mv
2. P = W/t
3. P = ρgh
4. P = F/A

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

90 | 200090 | 4.0 | 1.00

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

List-I	List-II
(A). Marginal product is maximum	(I). Total product is maximum
(B). Marginal product is zero	(II). Total product increases at constant rate
(C). Marginal product decreases	(III). Inflation point of total product curve
(D). Marginal product is constant	(IV). Total product increases at decreasing rate

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

91	200091	_____ is the percentage ratio of (effective operating time of machine) ÷ (effective operating time + turning time) of machine. 1. Performance efficiency 2. Comparative index 3. Field machine index 4. Time efficiency A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

92	200092		4.0	1.00

A liquid flows through two similar pipes 1 and 2. If the ratio of their flow velocities $V_1 V_2$ be 2:3, what will be the ratio of the head loss in the two pipes?

1. 8:27
2. $\sqrt{2}:\sqrt{3}$
3. 2:3
4. 4:9

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

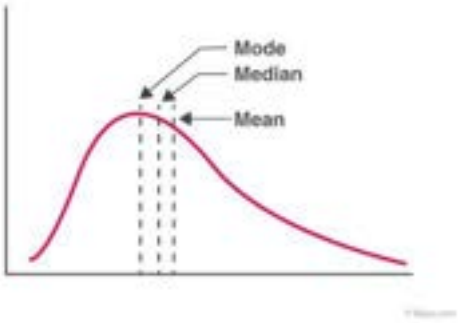
93	200093	The derivative of $x^2 \cos x$ is _____ 1. $2x \sin x - x^2 \sin x$ 2. $2x \cos x - x^2 \sin x$ 3. $2x \sin x - x^2 \cos x$ 4. $\cos x - x^2 \sin x \cos x$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

94	200094	Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R). Assertion (A) : Surface tension is the result of cohesive forces between molecules in the bulk of a liquid. Reason (R) : Surface tension is a measure of the energy required to increase the surface area of a liquid due to the attractive forces between molecules at the surface. In light of the above statements, choose the *correct* answer from the options given below. 1. Both (A) and (R) are true and (R) is NOT the correct explanation of (A). 2. Both (A) and (R) are true and (R) is the correct explanation of (A). 3. (A) is true but (R) is false. 4. (A) is false but (R) is true. A1 : 1 A2 : 2	4.0	1.00

		A3 : 3 A4 : 4		
Objective Question				
95	200095	Froude's number is defined as the ratio of _____. 1. inertia force to viscous force 2. inertia force to gravity force 3. inertia force to elastic force 4. inertia force to pressure force A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
96	200096	_____ goods are called as goods of first order. 1. Supply 2. Consumer 3. Transferability 4. Durability A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
97	200097		4.0	1.00

Which of the condition is satisfied as per the figure given below?



1. Mean = Median = Mode
2. Mean>Median>Mode
3. Mean > Mode>Median
4. Mean < Mode < Median

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

98 200098 4.0 1.00

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

List-I	List-II
(A). Steady flow	(I). Velocity changes along the length
(B). Uniform flow	(II). Velocity and depth of flow changes with time
(C). Non-uniform flow	(III). Velocity and depth of flow remains constant with time
(D). Unsteady flow	(IV). Velocity remains constant along the length

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

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

A1 : 1

A2 : 2

		A3 : 3 A4 : 4		
Objective Question				
99	200099	The measure of dispersion which uses only two observations is called_____ 1. Range 2. Quartile deviation 3. Mean deviation 4. Standard deviation A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
100	200100	Given below are two statements: Statement (I): Shaft horse power is always less than water horse power. Statement (II): For direct driven pump, shaft horse power is equal to brake horse power. In light of the above statements,choose the *most appropriate* answer from the options given below. 1. Both Statement (I) and Statement (II) are true. 2. Both Statement (I) and Statement (II) are false. 3. Statement (I) is true but Statement (II) is false. 4. Statement (I) is false but Statement (II) is true. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
101	200101	Perched water table is found in 1. Confined acquifer 2. Semi confined acquifer 3. Uncofined acquifer 4. Both confined and unconfined acquifer	4.0	1.00

		A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
102	200102	Archemedian screw is suitable to lift water from open water bodies to height ranging from 1. 0.5 to 1.20 m 2. 1.2 to 3.0 m 3. 3.0 to 4.0 m 4. 4.0 to 5.0 m A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
103	200103	Minimum wind speed required for the operation for windmill usually ranges from 1. 4-6 km/hr 2. 6-8 km/hr 3. 8-10 km/hr 4. 10-12 km/hr A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
104	200104	The most desirable soil structure is 1. Granular structure 2. Single grain structure 3. Massive structure 4. Compound structure A1 : 1	4.0	1.00

		A2 : 2 A3 : 3 A4 : 4		
Objective Question				
105	200105	Mixed flow pump is used for (A). High discharge (B). Medium head (C). High head (D). Low discharge Choose the ***correct*** answer from the options given below: 1. (A) and (C) only. 2. (B) and (D) only. 3. (A) and (B) only 4. (C) and (D) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
106	200106	Water conveyance efficiency is the ratio of 1. Water delivered to the irrigation plot to water delivered from the source 2. Water delivered from the source to water delivered to irrigation plot 3. Water reached to root zone to water delivered in irrigation plot 4. Water delivered in irrigation plot to water reached at root zone A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
107	200107		4.0	1.00

		Water use efficiency is 1. Total water required during crop growth period 2. Production per unit water applied 3. Duration of water applied during the crop gowth period 4. Yield of crop per hectare A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
108	200108	Overland flow during irrigation in a border strip is an example of 1. Steady flow 2. Unsteady flow 3. Steady flow with decreasing discharge 4. Unsteady flow with decreasing discharge A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
109	200109	The minimum satisfactory value of uniformity coefficient under normal condition of pressure and wind velocity in spinkler is 1. 75% - 80% 2. 80% - 85% 3. 85% - 90% 4. 90% - 95% A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
110	200110		4.0	1.00

		A drainage canal discharges 0.2 m^3/s and drains 250 ha. The drainage coefficient of land is 1. 0.52 cm 2. 6.90 cm 3. 0.69 cm 4. 0.43 cm A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
111	200111	If net irrigation for a crop is 8 cm and field efficiency is 75% then the gross irrigation depth to be applied will be 1. 10.66 cm 2. 6.00 cm 3. 8.75 cm 4. 12.00 cm A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
112	200112	Most hazardous element in the irrigation water in relation to crop growth and production is 1. Potassium 2. Magnesium 3. Sodium 4. Calcium A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
113	200113		4.0	1.00

The thickness of gravel pack in tubewells varies from

1. 5 to 8 cm
2. 8 to 15 cm
3. 15 to 20 cm
4. 20 to 25 cm

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

114 200114 4.0 1.00

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

List-I	**List-II**
(A). Vertical drainage	(I). Percolation
(B). Stuffing box	(II). Turbine pump
(C). Diffuser	(III). Centrifugal pump
(D). Groundwater recharge	(IV). Tubewell

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

115 200115 4.0 1.00

		The operating pressure of raingun varies from 1. 1-3 kg/cm^2 2. 3-9 kg/cm^2 3. 9-12 kg/cm^2 4. 12-18 kg/cm^2 A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
116	200116	What is the power requirement for pumping 450 litres of water per minute against a head of 50 m, assuming a pump efficiency of 65% ? What size (SHP) of electric motor is required? 1. 4.93 2. 7.50 3. 8.50 4. 9.20 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
117	200117	Given below are two statements: Statement (I): Surge irrigation is technically advanced furrow irrigation method in which water is supplied in cyclic form i.e pulses Statement (II): Deep percolation at upstream and runoff losses at downstream are minimum with surge irrigation. In light of the above statements, choose the *most appropriate* answer from the options given below: 1. Both Statement (I) and Statement (II) are correct. 2. Both Statement (I) and Statement (II) are incorrect. 3. Statement (I) is correct but Statement (II) is incorrect. 4. Statement (I) is incorrect but Statement (II) is correct. A1 : 1 A2 : 2	4.0	1.00

		A3 : 3 A4 : 4		
Objective Question				
118	200118	The total discharge of a drip system is 150 m^3/hr and discharge of Individual dripper is 8 liters per hour. Find out the number of emitters per plant if plant water requirement is 15 litres per day and also find out the area of field if the drippers plant spacing is 1 m x 1 m. (Assume the time of operation as 1 hr). 1. 9152 m^2 2. 8439 m^2 3. 9375 m^2 4. 7253 m^2 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
119	200119	Estimate the friction losses of 50 m long PVC pipe having inside diameter 50 mm. The velocity of flowing water is 1.0 m/s and friction factor of pipe is 0.05. 1. 10.20 m 2. 2.54 m 3. 3.1 m 4. 1.52 m A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
120	200120	The most significant component in the water charges levied by the government is 1. Betterment levy 2. International land revenue 3. Water rate 4. Irrigation cess A1 : 1	4.0	1.00

		A2 : 2 A3 : 3 A4 : 4		

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