

PREVIEW QUESTION BANK

Module Name : Agricultural Physics - 61-ENG
Exam Date : 29-Jun-2024 Batch : 14:30-16:30

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Negative Marks
Objective Question				
1	201	Movement of DNA from one bacterium to another through a tubular bridge or pilus: 1. Conjugation 2. Transposition 3. Transfection 4. Transduction A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
2	202	Which of the following is responsible for eliminating toxic oxygen by-products from cells? 1. Mitochondria 2. Golgi complex 3. Peroxisomes 4. Chloroplasts A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
3	203	A form of multiple parasitism in which a parasite preferentially attacks a host that is already parasitized by another species is known as 1. Cleptoparasitism 2. Ectoparasitoid 3. Obligate parasitism 4. Superparasitism A1 : 1	4.0	1.00

		A2 : 2		
		A3 : 3		
		A4 : 4		
Objective Question				
4	204	For mass multiplication of DD-136 nematode, the common host used is 1. Silk moth 2. Fruit sucking moth 3. Codling moth 4. Lesser wax moth A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
5	205	Chlorpyrifos methyl is effective against stored product insects except 1. <i>Rhizopertha dominica</i> 2. <i>Tribolium castaneum</i> 3. <i>Caryedon serratus</i> 4. <i>Oryzaephilus surinamensis</i> A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
6	206	Which of the following insects often cause inhalational allergies in human following large emergence of adult insects 1. Stick insects 2. May flies 3. Ear wigs 4. Preying mantis A1 : 1 A2 : 2	4.0	1.00

A3 : 3

A4 : 4

Objective Question

7	207	Given below are two statements: Statement (I): Climate is a weather condition related to smaller areas at a given place and at a given time, Statement (II): Weather is a condition of atmosphere at a given place and at a given time In light of the above statements, choose the <i>most appropriate</i> answer from the options given below. - Both Statement (I) and Statement (II) are correct. - Both Statement (I) and Statement (II) are incorrect. - Statement (I) is correct but Statement (II) is incorrect. - Statement (I) is incorrect but Statement (II) is correct. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

8	208	The local name of cyclone in Phillippines is - Hurricane - Cyclone - Baquo - Typhoon A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

9	209		4.0	1.00
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Which one of the following are secondary tillage implements?

- (A). Subsoiler
- (B). Cultivator
- (C). Disc harrow
- (D). Wetland plough

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

10 210

_____ is the most suitable, drought resistant and persistent grass?

- 1. *Alyosia sp.*
- 2. *Cenchrus ciliaris*
- 3. *Stylosanthes hamata*
- 4. *Sorghum bicolor*

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

11 211

The rainfed area in India is approximately

- 1. 30 mha
- 2. 40 mha
- 3. 57 mha
- 4. 70 mha

A1 : 1

A2 : 2

4.0 1.00

A3 : 3

A4 : 4

Objective Question

12	212	Which nutrient is often a limiting factor in agricultural production? 1. Nitrogen 2. Carbon 3. Oxygen 4. Hydrogen A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

13	213	What is a potential disadvantage of agroforestry systems? 1. Increased soil erosion 2. Decreased carbon sequestration 3. Reduced biodiversity 4. Enhanced susceptibility to pests A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

14	214	Pungency in mustard oil is due to 1. Amino acid 2. Allyl isothiocyanate 3. Erusic acid 4. Oxalic acid A1 : 1 A2 : 2	4.0	1.00
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		A3 : 3		
		A4 : 4		
Objective Question				
15	215	Sesamum belongs to the family 1. Chenopodiaceae 2. Papilionaceae 3. Leguminosae 4. Pedaliaceae A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
16	216	Dark period is critical in which type of plant? 1. Short day plant 2. Long day plant 3. Day neutral plant 4. All the options A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
17	217	Which of the following is NOT a significant contributor to greenhouse gas emissions from livestock farming? 1. Carbon dioxide 2. Methane 3. Nitrous oxide 4. Ammonia A1 : 1 A2 : 2 A3 : 3	4.0	1.00

A4 : 4

Objective Question

18	218	Fe deficiency is mostly seen in crops growing on 1. Calcareous or alkaline soils 2. Salt affected soils 3. Acidic soils 4. Neutral soils A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

19	219	EDV (Essentially Derived Varieties) are those which are derived from: 1. crossing two commercially known varieties 2. hybrid introduced from other countries 3. existing variety through genetic engineering or mutation 4. crossing commercially known variety with its wild relative A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

20	220	What is the role of "companion planting" in agriculture? 1. Enhancing soil fertility through crop rotation 2. Growing different crop species together to deter pests 3. Cultivating plants in hydroponic system 4. Increasing soil compaction through cover cropping A1 : 1 A2 : 2 A3 : 3	4.0	1.00
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		A4 : 4		
Objective Question				
21	2501	Amount of water retained at low values of matric suction is mainly affected by 1. Soil texture 2. Soil structure 3. Air-entry suction 4. Specific-surface of the soil A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
22	2502	A system of uniform grains in a soil structure is called as 1. Monodisperse 2. Hyperdisperse 3. Polydisperse 4. Multidisperse A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
23	2503	What is the coordination number of cubic tetrahedral type packing of soil spherical particles? 1. 6 2. 8 3. 10 4. 12 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question				
24	2504	What is not an assumption of Stoke's law? 1. All particles have the same density 2. The particles are rigid, smooth and spherical 3. Fluid flow around the particle is turbulent 4. The particles are large enough to be unaffected by the thermal motion A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
25	2505	Apparent drought is caused by 1. Wrong selection of crop 2. Late onset of monsoon 3. Wrong selection of crop variety 4. Early withdrawal of monsoon A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
26	2506	What is the most highly variable gas in our atmosphere ? 1. CO₂ 2. O₂ 3. Water vapour 4. Trace gases A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
27	2507		4.0	1.00

		Which theory is most suited for formation of warm clouds 1. Collision theory 2. Bergeron-Findeisen theory 3. Frontal theory 4. Occlusion thery A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
28	2508	Bilinear interpolation is the type of Interpolation where for each new location the intensity of the 1. Four pixels 2. immediate pixel 3. Eight pixels 4. Sixteen pixels A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
29	2509	Sentinel-2 satellite contains how many spectral bands ? 1. 10 2. 13 3. 15 4. 9 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
30	2510		4.0	1.00

Reference crop evapotranspiration computation (FAO-56) assumes the height of reference crop is

1. 12 cm
2. 15 cm
3. 8 cm
4. 10 cm

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

31 2511

Closely spaced isobar indicates the

1. Low pressure gradient
2. No pressure gradient
3. Very low pressure gradient
4. High pressure gradient

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0

1.00

Objective Question

32 2512

Specific surface of sand may be

1. $> 2 \text{ m}^2/\text{g}$
2. $< 2 \text{ m}^2/\text{g}$
3. $< 5 \text{ m}^2/\text{g}$
4. $> 10 \text{ m}^2/\text{g}$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0

1.00

Objective Question

33 2513

4.0

1.00

Multilayer adsorption can be estimated using

1. Langmuir's equation
2. BET equation
3. De Boer's equation
4. Teller's equation

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

34 2514

Kaolin minerals tend to appear in the region of

1. Along the equator
2. Mediterranean
3. Temperate
4. Tropical

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0

1.00

Objective Question

35 2515

Water risen in a capillary tube is characterized by a

1. +ve pressure potential
2. -ve pressure potential
3. zero pressure potential
4. Gravitational potential

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0

1.00

Objective Question

36 2516

4.0

1.00

The wind speed of cyclonic storm is

1. 25 to 33 knot
2. 34 to 47 knot
3. 47 to 67 knot
4. More than 67 knot

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

37 2517

4.0 1.00

Given below are two statements:

Statement (I): When the chlorine oxide reacts with ozone, the ozone concentration is reduced in the stratosphere.

Statement (II): The polar vortex is illuminated by the sun.

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

Objective Question

38 2518

4.0 1.00

Absolute humidity is the ratio of:

1. volume of water vapour to volume of air
2. mass of water vapour to mass of air
3. mass of water vapour to volume of air
4. AVP to SVP

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

39	2519	Thermal concept of Monsoon was proposed by 1. Walker 2. Halley 3. Bergeron 4. Campbell A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

40	2520	Hot, dry southerly wind that blows in Egypt in spring is called 1. Khamsin 2. Samsoco 3. Wester 4. Quesqueen A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

41	2521		4.0	1.00
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Match **List-I** with **List-II**

List-I	List-II
(Climatic types)	(Moisture indices)
(A). B2-Humid	(I). 0 to 20
(B). E-Arid	(II). -100 to -66.7
(C). D-Semiarid	(III). -66.7 to -33.3
(D). C2-Moist subhumid	(IV). 40 to 80

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

42	2522		4.0	1.00
In case of modified Koppen System, the average temperature of the coolest month for "A" type of climate is				
1. Less than 5 ⁰ C				
2. 5 ⁰ C to 10 ⁰ C				
3. 10 ⁰ C to 18 ⁰ C				
4. More than 18 ⁰ C				
A1 : 1				
A2 : 2				
A3 : 3				
A4 : 4				

Objective Question

43	2523		4.0	1.00
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Growing degree days concept is originated from

1. Kirchoof's law
2. Stephan Boltzmann law
3. Wein's law
4. Vant Hoff's law

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

44 2524

4.0 1.00

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

Assertion (A) : January is the coldest month at Delhi

Reason (R) : The earth gets minimum radiation as the sun-earth distance is maximum in January

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

Objective Question

45 2525

4.0 1.00

Which of the following law states that an increase in temperature will cause an increase in the rate of an endothermic reaction?

1. Kliff's law
2. Van't Hoff's law
3. Lamarck's law
4. Law of Dalton Hooker

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

46 2526

4.0

1.00

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

List-I	List-II
(A). Short day plants	(I). Wheat
(B). Long day plants	(II). Tomato
(C). Day neutral plants	(III). Andropogon
(D). Intermediate plant	(IV). Rice

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

- (A) - (I), (B) - (II), (C) - (III), (D) - (IV)
- (A) - (II), (B) - (III), (C) - (I), (D) - (IV)
- (A) - (I), (B) - (II), (C) - (IV), (D) - (III)
- (A) - (IV), (B) - (I), (C) - (II), (D) - (III)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

47 2527

4.0

1.00

Which of the following particles are used for cloud seeding in artificial rain making.

- (A) Silver iodide
- (B) Dry ice
- (C) Common salt
- (D) Dust particle

- (A), (B) and (C) only.
- (A), (B) and (D) only.
- (A), (B), (C) and (D).
- (B), (C) and (D) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

48	2528	Surface boundary layer of the Earth is dominated by which force? 1. Coriolis force 2. Pressure gradient force 3. Gravitational force 4. Frictional force A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

49	2529	Presence of inversion near the ground indicates which type of atmospheric condition? 1. Unstable 2. Stable 3. Windy 4. Rainy A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

50	2530		4.0	1.00
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Which effects are generated by advection in the crop fields?

- (A). Oasis effect
- (B). Clothesline effect
- (C). Seebeck effect
- (D). Peltier effect

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

51 2531

4.0 1.00

As per India State of Forest Report (ISFR)-2021, the area (sq km) of forest cover under the category of 'Open Forest' in India is

- 1. 3, 04, 499 sq km
- 2. 3, 07, 120 sq km
- 3. 3, 12, 684 sq km
- 4. 3, 21, 359 sq km

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

52 2532

4.0 1.00

India's first State of Forest Report was release in year:

- 1. 1985
- 2. 1986
- 3. 1987
- 4. 1988

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

53 2533

4.0 1.00

Given below are two statements:

Statement (I): The Indian Council of Forestry Research and Education was established in the year 1985 for taking care of forestry research, education and extension needs of the country.

Statement (II): The Indian Council of Forestry Research and Education was declared an autonomous Council under the then Ministry of Environment and Forests, Govt. of India in June, 1991

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

54 2534

4.0 1.00

As per the latest ISFR-2021, the order of forest carbon stock under different carbon pools is:

1. Litter > soil organic carbon > above + below ground biomass > dead wood
2. Above + below ground biomass > soil organic carbon > litter > dead wood
3. Dead wood > soil organic carbon > above + below ground biomass > litter
4. Soil organic carbon > above + below ground biomass > litter > dead wood

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

55 2535

4.0 1.00

World Agroforestry Centre, a brand name used by the International Centre for Research in Agroforestry, an international institute is headquartered in:

1. Beijing, China
2. Yokohama, Japan
3. Nairobi, Kenya
4. Vienna, Austria

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

56	2536	Botanical Survey of India (BSI) located in Kolkata, West Bengal, India was established in the year: 1. 1864 2. 1878 3. 1890 4. 1906 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

57	2537	The Center for International Forestry Research (CIFOR) and World Agroforestry (ICRAF) are the world's leading research and development organizations focused on forestry and agroforestry joined with each other in: 1. 2010 2. 2014 3. 2019 4. 2023 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question				
58	2538	The <i>Eucalyptus tereticornis</i>, a very important industrial tree species widely grown in different parts of India is native of : 1. Central America 2. Australia 3. Bahama 4. China A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
59	2539	Given below are two statements: Statement (I): The Convention on Biological Diversity (CBD) was adopted during the Earth Summit held in Rio de Janeiro in 1991. Statement (II): India became a party to the Convention on Biological Diversity (CBD) in 1995. In light of the above statements, choose the <i>most appropriate</i> 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	4.0	1.00
Objective Question				
60	2540	Which is the state among the followings which has reservation policy for different level of job(s) for B.Sc. Forestry professionals with appropriate weightage/ preferences in their state forest department? 1. Uttarakhand 2. Karnataka 3. Uttar Pradesh 4. Haryana A1 : 1	4.0	1.00

A2 : 2

A3 : 3

A4 : 4

Objective Question

61	2541	Environmental science is defined by which of the following statements? 1. Study of the interactions between the environment's and humans only 2. Study of the interactions between the environment's and physical components 3. Study of the interactions between the environment's and chemical components 4. Study of the interactions between the environment's physical, chemical, and biological components A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

62	2542	Which is the first zone of purification in a sand bed? 1. Heterotrophic zone 2. Schmutzdecke zone 3. Electrolytic zone 4. Autotrophic zone A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

63	2543	Which process of water treatment is done to avoid floating debris, branches, trees, or other large particles suspended in water? 1. Primary sedimentation 2. Secondary sedimentation 3. Screening 4. Aeration A1 : 1 A2 : 2	4.0	1.00
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A3 : 3

A4 : 4

Objective Question

64	2544	When Environmental Lapse Rate (ELR) is greater than Adiabatic Lapse Rate (ALR), then which of the following occurs? 1. Super adiabatic lapse rate 2. Neutral lapse rate 3. Adiabatic lapse rate 4. Sub adiabatic lapse rate A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

65	2545	Which of the following air pollution control device has maximum efficiency? 1. Spray tower 2. Wet cyclonic scrubber 3. Dynamic precipitator 4. Electrostatic precipitator A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

66	2546	Which of the following device is used to prevent the clogging of sewer pipes? 1. Drop manhole 2. Storm regulators 3. Flushing tank 4. Lamp hole A1 : 1 A2 : 2 A3 : 3	4.0	1.00
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A4 : 4

Objective Question

67	2547	Which of the following gas is released when alum is added to water? 1. Ca (OH)₃ 2. CO₂ 3. Al (OH)₃ 4. CaSO₄ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

68	2548	Which of the following is not commonly used as a filter material in the treatment of water? 1. Garnet sand 2. Crushed rock 3. Sand 4. Anthracite A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

69	2549	Which of the following is correct regarding disposal of waste by land filling? 1. Economical method 2. Preferred in low lying areas 3. Foul gases are not produced 4. Separation of different types of waste not required A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

70	2550	Under which rule of Government, guidelines for solid waste management are followed today? 1. Municipal Solid Waste Rules, 2000 2. Municipal Solid Waste Rules, 2016 3. Solid Waste Rules, 2000 4. Solid Waste Rules, 2016 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

711003151

4.01.00

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

List-I	List-II
Physical quantity	SI units
(A).Entropy	(I). J K^{-1}
(B).Free Energy	(II). Kg ms^{-1}
(C). Force	(III). $\text{Kg m}^2\text{s}^{-2}$
(D). Momentum	(IV). Kg ms^{-2}

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

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

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

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

72	1003152		4.0	1.00
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In any fission process the ratio of

$\frac{\text{mass of parent nucleus}}{\text{mass of fission products}}$ is

1. Equal to 1
2. Greater than 1
3. Less than 1
4. Depends on the mass of hte parent nucleus

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

73	1003153	Which of the following is true about Sustained Interference of light waves (A).Waves from two sources must of same frequency (B).The path difference between overlapping waves must be less than the coherence length of the waves (C).The two light waves must be coherent (D).Waves polarized in perpendicular planes produce interference effects Choose the correct answer from the options given below: 1. (A), (B) and (D) only. 2. (B) and (C) only. 3. (A), (B) and (C) only. 4. (B), (C) and (D) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

74	1003154	Bending of light waves around the corners and spreading into the geometrical shadow of an object is called 1. Interference 2. Brewster's law 3. Diffraction 4. Polarisation A1 : 1	4.0	1.00
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A2 : 2

A3 : 3

A4 : 4

Objective Question

75	1003155	Which of the following is correct form of equation of state for a Van der Waals' gas, 1. $\left(P + \frac{a}{V^2}\right)(V - b) = RT$ 2. $\left(V + \frac{a}{P^2}\right)(V - b) = RT$ 3. $\left(P + \frac{a}{V^2}\right)(P - b) = RT$ 4. $\left(V - \frac{a}{P^2}\right)(P - b) = RT$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

76	1003156	Residual soil water is related to (A) Macropores (B) Mesopores (C) Micropores (D) Soil aggregates Choose the correct answer from the option given below: 1. (A), (B) and (C) only 2. (A) and (B) only 3. (C) only 4. (A), (B) and (D) only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

77	1003157		4.0	1.00
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Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R).

Assertion (A) : The Proctor test evaluates the effects of water content (θ_m), and organic and mineral composition of homogenized soil on compactability.

Reason (R) : The coarser the soil sample, the higher the Proctor bulk density value at a smaller water content (θ_{opt})

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 and (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

Objective Question

78	1003158	The post -infiltration movement of water in an initially unsaturated profile is called 1. Satiation 2. Internal drainage 3. Evaporation 4. Redistribution A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

79	1003159	Poiseuille's law is applicable to 1. Perfect fluids 2. Newtonian fluid 3. Laminar flow 4. Turbulent flow A1 : 1 A2 : 2	4.0	1.00
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A3 : 3

A4 : 4

Objective Question

80	1003160	Liquid ratio is defined as (A) Volume of solid per unit volume of water (B) Volume of air per unit volume of water (C) Volume of organic matter per unit volume of water (D) Volume of water per unit volume of the solid Choose the correct answer from the option given below: 1. (A), (B) and (C) only 2. (C) only 3. (A), (B) and (D) only 4. (D) only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

81	1003161	If a soil has mass wetness of 25% at field capacity and 5% at permanent wilting point, and if its bulk density is 1.2 g/cm³, the available water capacity in terms of equivalent water depth in 60 cm soil layer will be 1. 14.0 cm 2. 14.2 cm 3. 14.4 cm 4. 10 cm A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

82	1003162		4.0	1.00
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The sphere of influence of neutron moisture meter for dry is

1. 0.05 m
2. 0.10 m
3. 0.25 m
4. 0.025 m

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

83 1003163 4.0 1.00

Match list I with list II

List I	List II
(A). Gypsum block	(I). L^2T^{-2}
(B). Pneumatic potential	(II). $ML^{-1}T^{-2}$
(C). Energy per unit mass	(III). Soil water content
(D). Energy per unit volume	(IV). water potential due to air

Choose the correct answer from the option given below:

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

84 1003164 4.0 1.00

Which law explains that maximum spectral radiant emittance from earth features occurs at a wavelength of about $9.7 \mu\text{m}$?

- (A). Wien's displacement law
(B). Stefan-Boltzmann law
(C). Planck's law

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

85 1003165

4.0 1.00

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

Assertion (A) : In the relatively long wavelength radio range, a sandy beach can appear smooth to incident energy, whereas in the visible portion of the spectrum, it appears rough.

Reason (R) : When the wavelength of incident energy is much smaller than the surface height variations or the particle sizes that make up a surface, the reflection from the surface is diffuse.

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

Objective Question

86 1003166

4.0 1.00

Fog and clouds appears white because of

1. Rayleigh scattering
2. Mie scattering
3. Non-selective scattering
4. Atmospheric absorption

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

87	1003167	Which radiometric unit measures the total power emitted by a source per unit solid angle?	4.0	1.00
1. Radiant flux 2. Radiant intensity 3. Radiant emittance 4. Radiant exposure				
A1 : 1				
A2 : 2				
A3 : 3				
A4 : 4				

Objective Question

88	1003168	According to Beer-Lambert's law, the amount of light absorbed by a medium is proportional to:	4.0	1.00
1. The square of the intensity of the incident light. 2. The inverse of the intensity of the incident light. 3. The product of the intensity of the incident light and the distance it travels through the medium. 4. The concentration of the absorbing medium and the distance it travels through the medium.				
A1 : 1				
A2 : 2				
A3 : 3				
A4 : 4				

Objective Question

89	1003169		4.0	1.00
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Match **List-I** with **List-II**

List-I	List-II
(Bands)	(Wavelength range)
(A). SWIR	(I). 0.7 to 1.3 μm
(B). Microwave	(II). 1.3 to 3 μm
(C). Thermal IR	(III). 3 -14 μm
(D). NIR	(IV). 1mm – 1m

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

- (A) - (I), (B) - (II), (C) - (III), (D) - (IV)
- (A) - (II), (B) - (IV), (C) - (III), (D) - (I)
- (A) - (III), (B) - (I), (C) - (IV), (D) - (II)
- (A) - (IV), (B) - (I), (C) - (II), (D) - (III)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

90 1003170

4.0 1.00

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

Assertion (A) : The effect of Rayleigh scatter is inversely proportional to the third power of wavelength.

Reason (R) : Hence, there is a much stronger tendency for short wavelengths to be scattered by this mechanism than long wavelengths.

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

- Both (A) and (R) are true and (R) is the correct explanation of (A).
- Both (A) and (R) are true but (R) is NOT the correct explanation of (A).
- (A) is true but (R) is false.
- (A) is false but (R) is true.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question				
91	1003171	Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R). Assertion (A) :Beer's law is not valid when absorbing material is coagulated Reason (R) : There may be large areas of open space through which radiation can pass and absorption will decrease In light of the above statements, choose the <i>correct</i> answer from the options given below. - Both (A) and (R) are true and (R) is the correct explanation of (A). - Both (A) and (R) are true but (R) is NOT the correct explanation of (A). (A) is true but (R) is false. (A) is false but (R) is true. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question				
92	1003172	Given below are two statements: Statement (I): EPR and NMR spectroscopy deal with interaction between electromagnetic radiation and magnetic moments Statement (II): In EPR the magnetic moments arise from the atomic nuclei In light of the above statements,choose the <i>most appropriate</i> answer from the options given below 1. Statement (I) is true but Statement (II) is false 2. Both Statement (I) and Statement (II) are false 3. Statement (I) is false but Statement (II) is true 4. Both Statement (I) and Statement (II) are true A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question				
93	1003173	Which of the following is an example of inorganic nanomaterial 1. Graphene 2. Titanium oxide nanomaterial 3. Carbon nanotubes 4. Fullerenes A1 : 1	4.0	1.00

A2 : 2

A3 : 3

A4 : 4

Objective Question

94	1003174	Given below are two statements: Statement (I): Bottom-up nanofabrication implies making increasingly small structures by progressively removing matter Statement (II): Top-down nanofabrication implies building new nano-objects by rearranging atoms or molecules In light of the above statements, choose the <i>most appropriate</i> answer from the options given below. 1. Statement (I) is true but Statement (II) is false. 2. Both Statement (I) and Statement (II) are false. 3. Statement (I) is false but Statement (II) is true 4. Both Statement (I) and Statement (II) are true. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

95	1003175	In step-index optical fibers, which of the following is correct, 1. Cladding material has higher refractive index than core 2. Cladding material has lower refractive index than core 3. Core and cladding are made of material of same refractive index 4. Refractive index of core and cladding material is not considered. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

96	1003176	Sedimentation is inversely proportional to 1. Acceleration due to gravity 2. Effective mass 3. Difference between the densities 4. Viscosity	4.0	1.00
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A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

97 1003177

4.0 1.00

Which filter/s should be used when short wavelength transmittance is desired?

- (A). High pass filter
 (B). Band pass filter
 (C). Interference filter

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

98 1003178

4.0 1.00

A flooded area is covered by 120 dots on a 20 dot/cm² grid on a 1:10,000 vertical aerial photograph. Find the ground area flooded.

1. 24 ha
2. 6 ha
3. 8 ha
4. 2.4 ha

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

99 1003179

4.0 1.00

If kinetic temperature of a blackbody is 27.0 °C then what would be the radiant temperature of that blackbody?

1. 27.0 °C
2. 25.5 °C
3. 23.2 °C
4. 20.8 °C

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

100 1003180

What does AVIRIS stand for?

1. Airborne Visual-Infrared Imaging Sensor
2. Airborne Visible-Infrared Imaging Spectrometer
3. Advanced Visual-Infrared Imaging System
4. Atmospheric Visible-Infrared Imaging Scanner

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

101 1003181

4.0 1.00

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

List-I	List-II
(Satellite)	(Resolution)
(A). Landsat-8	(I). 10m
(B). Sentinel-2	(II). 10m, 20m and 60m
(C). Sentinel-1	(III). 30 m and 100m
(D). MODIS	(IV). 250m and 500m

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

- (A) - (I), (B) - (II), (C) - (III), (D) - (IV)
- (A) - (III), (B) - (II), (C) - (I), (D) - (IV)
- (A) - (II), (B) - (I), (C) - (IV), (D) - (III)
- (A) - (III), (B) - (IV), (C) - (II), (D) - (I)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

102 1003182

The slope of regression line between radiance and digital number of a sensor is called as

- Gain
- Bias
- Channel offset

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

- (A) only.
- (B) only.
- (C) only.
- (B) and (C) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

103	1003183	Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R). Assertion (A) : The azimuth resolution size increases with real aperture systems of a radar system with the increase of distance from the aircraft. Reason (R) : The azimuth resolution size increases with synthetic aperture systems of a radar system with the increase of distance from the aircraft. In light of the above statements, choose the <i>correct</i> answer from the options given below. - Both (A) and (R) are true and (R) is the correct explanation of (A). - Both (A) and (R) are true but (R) is NOT the correct explanation of (A). (A) is true but (R) is false. (A) is false but (R) is true. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

104	1003184	Examples of Raster data are (A) DTM (B) Spaghetti (C) DEM (D) Arc/node model Choose the correct answer from the options given below: (A), (C), and (D) only (A) and (D) only (A), (B), (C) and (D) (A) and (C) only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

105	1003185		4.0	1.00
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Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R).

Assertion (A) : A map layer is a set of data describing a single characteristic for each location within a bounded geographic area

Reason (R) : Only one item of information is available for each location within a single layer

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 and (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

Objective Question

106	1003186	Vectorization process is not very easy as compared to rasterization, because 1. Vector format needs topographical structure 2. Vector format does not need topographical structure 3. Multiple items of information require multiple layers 4. There is mixed pixel problem A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

107	1003187		4.0	1.00
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Match list I with list II

List I	List II
(A).Analog maps	(I). Digital photo workstation
(B).Areal Photography	(II). Image processing software
(C). Satellite images	(III).GPS
(D). Ground survey	(IV). Digitizer

Choose the correct answer from the option given below:

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

108 1003188

Which of the following sentence/sentences is/are correct?

- (A) GPS satellites transmit two low power radio signals
- (B) L1 carries only the precise code (P)
- (C) L2 carries precise code (P) and coarse/acquisition (C/A) code
- (D) P code is normally encrypted

Choose the correct answer from the options given below:

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

109	1003189	The most popular modern datum for much of Europe is 1. ED50 2. ETRS89 3. WGS84 4. NAD83 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

110	1003190	In Gnomonic projection system, which of the following statements are correct (A) The complete hemisphere can not be projected (B) Equator can be projected (C) Large area can not be mapped satisfactorily (D) All meridians will project as straight radial lines Choose the correct answer from the options given below: 1. (A), (B), and (D) only 2. (A) and (D) only 3. (A), (C), and (D) only 4. (A), (B), (C) and (D) A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

111	1003191		4.0	1.00
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Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R).

Assertion (A) : In natural convection flows, temperature can not be considered as a passive admixture.

Reason (R) : Because in homogeneities of the temperature field in the presence of gravity give rise to significant buoyant accelerations

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

Objective Question

112 1003192

4.0 1.00

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

List-I	List-II
(Number/ Index)	(Equation.)
(A). Peclet number	(I). v / α_h
(B). Prandtl number	(II). $H_0 L / \alpha_h \Delta T$
(C). Nusselt number	(III). UL / α_h
(D). Stanton number	(IV). Nu / Pe

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question				
113	1003193	Which factors determine the amount of radiation penetration, radiation trapping and mutual shading within the plant canopy? (A). Solar altitude angle (B). Canopy architecture (C). Average albedo of individual leaves (D). Wind velocity Choose the correct answer from the options given below: 1. (A) and (D) only. 2. (A) and (B)) only. 3. (B) and (D) only. 4. (B) and (C) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
114	1003194	Which cloud is having the shape of a lens; often elongated and usually with well-defined outlines? 1. Lentifractus 2. Lensistratus 3. Lencicumulus 4. Lenticularis A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
115	1003195		4.0	1.00

Which statements are true for 'eye' of an cyclone?

- (A). The eye has a diameter of about 10 to 50 km
- (B). The eye generally cloud free and is surrounded by thin wall clouds around it
- (C). It resembles an 'eye' when viewed in a satellite picture
- (D). 'Eye' forms at the centre of the storm outside a Central Dense Overcast (CDO) region

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

116 1003196

What is the time step of simulation in most of the current crop simulation model?

1. Hourly
2. Daily
3. Weekly
4. Monthly

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

117 1003197

4.0 1.00

What is/are the reducing factor(s) at production level 1 in crop simulation model?

- (A). Weather
- (B). Water
- (C). Nutrient
- (D). Pest

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

118 1003198

Which is/are rate variables?

- (A). Transpiration rate
- (B). Photosynthesis rate
- (C). Radiation use efficiency
- (D). Base temperature

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

119 1003199

4.0 1.00

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

List-I	List-II
(Variable type)	(Forrester's Diagram Symbol)
(A). Source & Sink	(I). Control valve
(B). Rate	(II). Cloud
(C). State	(III). Rectangle
(D). Auxillary	(IV). Circle
(E). Driving	(V). Diamond

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

120	1003200	What are the driving variables governs the phenology of crop (A). Temperature (B). Nutrient (C). Water (D). Photo-period Choose the correct answer from the options given below: 1. (A) and (B) only. 2. (B) and (C) only. 3. (A) and (D) only. 4. (A), (B) and (D) only. A1 : 1 A2 : 2	4.0	1.00
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		A3 : 3		
		A4 : 4		