

PREVIEW QUESTION BANK

Module Name : Renewable Energy Engineering - 42-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		
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		
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		

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

Objective Question

5 205

Chlorpyrifos methyl is effective against stored product insects except

1. *Rhizopertha dominica*
2. *Tribolium castaneum*
3. *Caryedon serratus*
4. *Oryzaephilus surinamensis*

A1 : 1

A2 : 2

A3 : 3

A4 : 4

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

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 *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

8 208

The local name of cyclone in Phillippines is

1. Hurricane
2. Cyclone
3. Baquio
4. Typhoon

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

9 209

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

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

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

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

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

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

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

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

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

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

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

A4 : 4

Objective Question

21 2001

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

Assertion (A) : A fluidised bed gasifier is most versatile and can handle biomass with high ash content.

Reason (R) : Fluidised bed generally contains either inert material or reactive material.

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

22 2002

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

Assertion (A) : Noise Induced Hearing Loss (NIHL) is irreversible.

Reason (R) : NIHL is even, being greater in lower frequency than higher frequency.

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

23 2003

Given below are two statements:

Statement (I): The top of the piston heats much more than does the lower skirt.

Statement (II): The pistons are made larger at the top to absorb excessive heat released during compression stroke, and are said to have skirt taper.

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

24 2004

Given below are two statements:

Statement (I): Premixed combustion is smoother and quieter than diffusion combustion.

Statement (II): The longer the ignition delay, the higher percentage of the fuel that burns in premixed combustion and lower the percentage that burns in diffusion combustion.

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

25 2005

Given below are two statements:

Statement (I): Hydrodynamic lubrication occurs when oil film is thick enough to prevent projections on one surface from contacting those projections on the mating surface.

Statement (II): All bearings in an engine are in hydrodynamic lubrication when the engine is started from rest or when it is coasting to a stop.

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

26 2006

Most of the gears fail from

- (A). bending fatigue
- (B). surface wear
- (C). stiff housing
- (D). pitting
- (E). curved surfaces

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

27 2007

Machine parameters those influence the performance of a combine harvester are

- (A). speed of reel
- (B). speed of threshing cylinder
- (C). extent of vibration
- (D). height of cut
- (E). speed of straw rack

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

28 2008

Choose the correct characteristics of the Darrieus rotor.

- (A). low starting torque
- (B). self-starting
- (C). high speed
- (D). potentially high capital cost
- (E). high efficiency

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

29 2009

Which of the following are air heat plate collectors based on absorbing surface?

- (A). flat plate absorber
- (B). sandwich type absorber
- (C). corrugated plate absorber
- (D). overlapped transparent plate absorber
- (E). transpiration absorber

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

30 2010

Among the different type of combustion chambers, the peak pressure is the lowest for the

- 1. Open chamber
- 2. Precombustion chamber
- 3. Swirl combustion chamber
- 4. Auxiliary chamber

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

31 2011

Range of aspect ratio for high molded tyres

- 1. 0.50 or less
- 2. 0.50-0.75
- 3. 0.75-1.00
- 4. 1.00 or higher

A1 : 1

A2 : 2

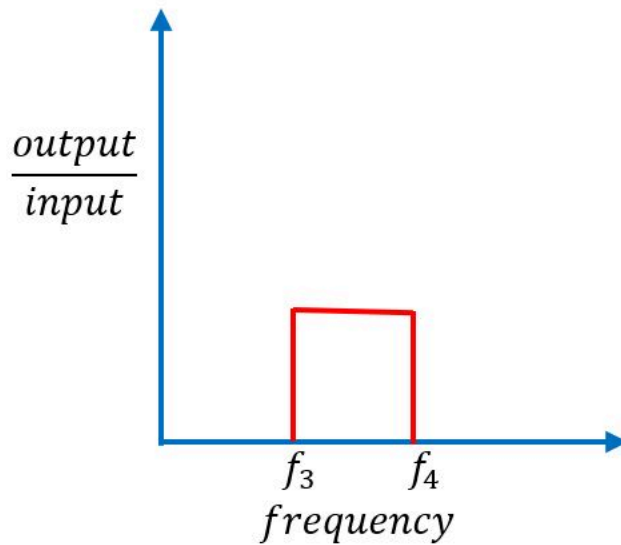
A3 : 3

A4 : 4

Objective Question

32 2012

In the given figure, the amplitude ratio of output of a filter to the input is plotted against frequency. What is the type of the filter?



1. Low pass filter
2. High pass filter
3. Band pass filter
4. Notch type filter

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

33 2013

Which of the following is not a type of solar still?

1. Single effect solar still
2. Multiple effect solar still
3. Tilted tray solar still
4. Wick type solar still

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

34 2014

To minimize ride vibrations, the location of the operator's seat should be

1. Closer to steering wheel
2. Near to the centre of gravity
3. Directly above the rear axle
4. Slightly ahead of the rear axle

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

35 2015

Which of the following is an obtuse angle-type furrow opener?

1. Shovel type
2. Pointed shoe type
3. Stub runner type
4. Hoe type

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

36 2016

What is the terminal velocity for the wheat chaff?

1. $1.5 - 2.5 \text{ m.s}^{-1}$
2. $2.5 - 6.0 \text{ m.s}^{-1}$
3. $6.0 - 9.5 \text{ m.s}^{-1}$
4. $9.5 - 11.5 \text{ m.s}^{-1}$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

37 2017

Which of the following threshing cylinder is used for producing very fine wheat straw?

1. Spike tooth type
2. Hammer mill type
3. Rasp-bar type
4. Axial flow type

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

38 2018

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

Assertion (A) : Concave end of the disc harrow gang tends to penetrate more deeply than the convex end.

Reason (R) : The radial force, which includes the vertical support force on the disc blade, must pass slightly to the rear of the disc centerline.

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

39 2019

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

Assertion (A) : The power requirement of a rotary mower is much higher than that of a sickle bar mower of the same width.

Reason (R) : The knives of rotary mower are hinged to the disc or drum so that they can swing back if they hit a rock or other obstruction; centrifugal force keeps the knives in cutting position during normal operation.

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

40 2020

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

Assertion (A) : The rotating counterweight commonly provided on the flywheel of a mower pitman drive does not give complete balancing

Reason (R) : Inertia force of the knife varies as the square of crank speed and as the first power of stroke.

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

41 2021

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

List-I	List-II
Structure Type	Return Period (Years)
(A). Earth dams having natural spillways	(I). 25
(B). Stock water dams	(II). 25-50
(C). Terrace outlets and vegetated waterways	(III). 15
(D). Field diversions	(IV). 10
	(V). 50-100

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

42 2022

A linear reservoir is one in which storage is directly proportional to:

1. Inflow
2. Outflow
3. Reservoir dimensions
4. Stage

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

43 2023

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

List-I	List-II
(A). Percussion (cable tool) drilling	(I). Unconsolidated formations
(B). Rotary drilling	(II). Consolidated formations
(C). Artesian well	(III). Unconfined aquifer
(D). Perched aquifer	(IV). Confined aquifer
	(V). Semi-confined aquifer

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

44 2024

Given below are two statements:

Statement (I): Specific speed of the pump is directly proportional to the square root of head.

Statement (II): The specific speed for a single impeller centrifugal pump varies between 300 to 5000.

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

45 2025

Given below are two statements:

Statement (I): Water requirement of the crops is lesser than the field irrigation requirement.

Statement (II): Field irrigation requirement does not include contribution from other sources except 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

A3 : 3

A4 : 4

Objective Question

46 2026

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

List-I	List-II
(A). $I = Kt^{-n}$	(I). Philip's equation
(B). $y = at + b(1 - e^{-rt})$	(II). USSCS, 1964
(C). $St^{1/2} + At$	(III). Kostiakov's equation
(D). $y = at^a + b$	(IV). Lewis and Milne equation
	(V). Horton equation

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

47 2027

Given below are two statements:

Statement (I): Single crop coefficient approach is used for surface irrigation methods.

Statement (II): Dual crop coefficient approach is used for micro irrigation methods.

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

48 2028

Given below are two statements:

Statement (I): Blaney-Criddle method uses mean temperature and monthly percentage day time hours.

Statement (II): Blaney-Criddle method was developed for the humid condition for consumptive use computation.

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

49 2029

Concrete mixture (Cement: Sand: Gravel or broken stone) usually recommended for lining of canals is:

1. 1:2:3
2. 1:3:2
3. 1:3:5
4. 1:3:4

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

50 2030

Given below are two statements:

Statement (I): A channel section is most economical when maximum discharge is obtained for a given cost of construction.

Statement (II): Discharge is maximum when the flow velocity is minimum.

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

51 2031

Drip emission uniformity (EU) is calculated using:

1. $100(1.5 - \frac{1.27 C_v}{\sqrt{n}}) \frac{q_a}{q_m}$
2. $100(1.0 - \frac{1.27 C_v}{\sqrt{n}}) \frac{q_m}{q_a}$
3. $100(2.0 - \frac{1.27 C_v}{\sqrt[3]{n}}) \frac{q_a}{q_m}$
4. $100(2.0 - \frac{1.27 C_v}{\sqrt[3]{n}}) \frac{q_m}{q_a}$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

52 2032

Leaching requirement (LR) is estimated using

1. $\frac{D_d}{D_i}$
2. $\frac{EC_d}{EC_i}$
3. $\frac{D_i}{D_d}$
4. $\frac{2EC_i}{EC_d}$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

53 2033

Light soils can be irrigated successfully across slope up to:

1. 2 %
2. 3 %
3. 5 %
4. 10 %

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

54 2034

Following are the statements regarding irrigation efficiencies:

- (A). Water conveyance efficiency is associated with the canal network.
- (B). Water application efficiency is related with the irrigation method.
- (C). Economic efficiency is related with the overall performance of the irrigation system.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

55 2035

Following are the statements regarding sediment loads:

(A). Bed load is associated with the movement of coarse particles along the bed surface through sliding, rolling and saltation.

(B). Bed load forms less than 25 % portion of total load.

(C). Suspended load of a stream is not measured by sampling the stream flow.

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

1. (A) and (B) only.

2. (B) and (C) only.

3. (A) and (C) only.

4. (A), (B) and (C).

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

56 2036

Time of concentration (T_c) is expressed by the following equation:

1. $0.0195 L^{0.77} S^{-0.385}$

2. $0.0195 L^{0.77} S^{0.385}$

3. $0.0195 L^{0.5} S^{0.5}$

4. $0.0195 L^{0.6} S^{0.5}$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

57 2037

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

Assertion (A) : The lower and upper limit of the curve number corresponds to 0 and 100

Reason (R) : The lower curve number corresponds to highest runoff potential and indicates an impermeable 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 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

58 2038

Following are the statements regarding grassed waterways:

- (A). The Manning's coefficient of roughness is 0.04 for design.
- (B). These are designed to carry maximum runoff from a storm of 10 years recurrence interval.
- (C). These are constructed across the land slope to remove excess water.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

59 2039

The minimum length of shelter belt should be how many times of its height?

1. 12
2. 24
3. 36
4. 48

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

60 2040

Compute drainage coefficient if 1 hectare of land is drained and the drainage canal discharges 1 cubic meter of discharge per hour.

1. 1.2 mm
2. 2.4 mm
3. 4.8 mm
4. 7.2 mm

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

61 2041

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

List-I	List-II
(A). Janssen's theory	(I). Convection
(B). CAP	(II). Bag storage
(C). Newton's law	(III). Constant humidity
(D). Sensible heating	(IV). Storage structure

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

62 2042

Equation for predicting EMC of agricultural products is given by

- (A). Kelvin
- (B). Harkins-Jura
- (C). Henderson
- (D). Janssen

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

63 2043

Given below are two statements:

Statement (I): In a deep bin, plane of rupture strikes the opposite side of structure before it meets the grain surface.

Statement (II): A grain bin can be classified as deep bin when the depth of grain is greater than the equivalent diameter.

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

64 2044

Thermal vapour compression is used in

- (A). Evaporator
- (B). Homogenizer
- (C). Pasteurizer
- (D). Blancher

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

65 2045

Given below are two statements:

Statement (I): Majority of the drying of agricultural produce fall under falling rate regime.

Statement (II): Spray dryers are commonly used for liquid foods.

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

66 2046

Ideal elastic behaviour of a material can be explained by

1. Newtonian liquid
2. St. Venant body
3. Hookean body
4. Janssen equation

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

67 2047

In comparison to other types of conveyors, screw conveyors

1. Require relatively low power and are more susceptible to wear
2. Require relatively high power and are more susceptible to wear
3. Require relatively low power and are less susceptible to wear
4. Require relatively high power and are less susceptible to wear

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

68 2048

Major functions of blanching of fruits and vegetables before dehydration and canning include

- (A). Inactivation of enzymes
- (B). Killing of pathogenic microbes
- (C). Softening of tissue
- (D). Cleaning of raw material

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

69 2049

Glazing is related to which of the following crop processing?

1. Paddy
2. Wheat
3. Maize
4. Soybean

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

70 2050

Capacity of an air screen cleaner depends on which of the following parameters?

- (A). Grain bed depth
- (B). Size of screen surface
- (C). Feeding mechanism
- (D). Percentage opening area of screen

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

71 1002151

What is the primary chemical process used in the production of biodiesel from raw materials?

1. Hydrolysis
2. Oxidation
3. Trans-esterification
4. Polymerization

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

72 1002152

Bioethanol production from lignocellulosic biomass typically does not include which of the following stages?

1. Pretreatment
2. Fermentation
3. Distillation
4. Pyrolysis

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

73 1002153

Compared to fossil fuels, liquid biofuels are not intended to

1. Have a higher energy output per unit input
2. Reduce greenhouse gas emissions
3. Provide a renewable energy source
4. Provide low energy output per unit input

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

74 1002154

Which instrument is commonly used to measure solar radiation?

1. Anemometer
2. Hygrometer
3. Barometer
4. Pyranometer

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

75 1002155

What is the main function of the absorber plate in a flat plate solar collector?

1. To reflect solar radiation
2. To convert solar energy into heat
3. To store heat
4. To insulate the collector

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

76 1002156

What principle do solar thermal power stations primarily use to generate electricity?

1. Photovoltaic effect
2. Thermoelectric effect
3. Rankine cycle
4. Electromagnetic induction

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

77 1002157

What is the primary purpose of a solar still?

1. To generate electricity
2. To heat water
3. To desalinate water
4. To store solar energy

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

78 1002158

When estimating the load for a PV system, which factor is not typically considered?

1. Peak sun hours
2. System efficiency
3. Battery capacity
4. Wind speed

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

79 1002159

What is the primary role of an inverter in a PV system?

1. To store electrical energy
2. To convert DC to AC
3. To regulate voltage
4. To track the sun

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

80 1002160

In solar driers, what is the process that primarily drives moisture removal from the product?

1. Condensation
2. Evaporation
3. Sublimation
4. Adsorption

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

81 1002161

What is a unique feature of salt-gradient solar ponds?

1. They can store heat for long periods.
2. They have a uniform temperature throughout.
3. They are used for fish farming.
4. They reflect most of the solar radiation.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

82 1002162

What is a key advantage of using PV powered water pumps in remote locations?

1. No need for fuel
2. Lower water requirements
3. Higher water flow rates
4. No maintenance required

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

83 1002163

What is the term used to describe the variation of wind speed with height above the ground?

1. Wind shear
2. Wind gradient
3. Wind profile
4. Wind scale

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

84 1002164

Which law relates wind speed at one height to that at another height in the atmospheric boundary layer?

1. Bernoulli's principle
2. Betz's law
3. The power law
4. The drag coefficient

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

85 1002165

What is the primary purpose of an aerofoil in wind turbine design?

1. To increase drag
2. To increase lift
3. To reduce noise
4. To store energy

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

86 1002166

Which matter presence is indicated by means of biological oxygen demand?

1. Organic matter
2. Inorganic matter
3. Physicochemical matters
4. Soil chromium status

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

87 1002167

Kjeldahl method is used to determine which of the following parameters in the sample

1. Nitrogen
2. Ammonia
3. Oxygen
4. Carbon dioxide

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

88 1002168

Dulong's formula can be used to calculate calorific value of biomass based on which composition?

1. Proximate
2. Hydrogen and Oxygen only
3. Elemental
4. Nitrogen only

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

89 1002169

How many kilogram of oxygen is required to burn one kg of methane?

1. Seven
2. Six
3. Five
4. Four

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

90 1002170

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

List-I	List-II
(A). Specific gravity	(I). Resistance to flow of a liquid created due to the internal friction of one part of a fluid moving over another.
(B). Cetane number	(II). Ratio of the density of a substance to the density of a reference substance.
(C). Viscosity	(III). Percentage of cetane in a mixture of cetane and 1-methylnapthalene of the same quality as the given fuel.
(D). Pour point	(IV). Lowest temperature at which it becomes semi solid and loses its flow characteristics

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

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

91 1002171

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

List-I	List-II
(A). B40	(I). Exhaust emission during engine testing
(B). Variable compression ratio	(II). Compression ratio can vary from 5:1 to 20:1.
(C). Exhaust analyser	(III). Biodiesel can be stored for extended periods without oxidation
(D). Oxidative stability	(IV). 40% of biodiesel and 60% of diesel mixture

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

92 1002172

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

List-I	List-II
(A). Temperature of vapourization	(I). 3:1 ratio with vegetable oil
(B). Higher addition of alcohol	(II). NaOH and KOH
(C). Theoretically the addition of alcohol	(III). Important to decide reaction temperature of transesterification
(D). Catalyst for biodiesel	(IV). Difficulty in segregation of esters

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

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

93 1002173

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

List-I	List-II
(A). Direct use of triglycerides	(I). Lead to the engine problems
(B). Fatty acid alkyl esters	(II). Transesterification reaction
(C). Biodiesel production	(III). 0.5 to 1% by weight
(D). Alkaline catalyst concentration	(IV). 60 to 70 °C temperature

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

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

94 1002174

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

List-I	List-II
(A). Array	(I). Individual solar modules are connected
(B). Solar photovoltaic systems	(II). High Reliability
(C). Hybrid system.	(III). Combining PV systems with any type of power production systems
(D). Selective coatings	(IV). Better absorptance of transmitted solar radiation into the solar collectors.

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

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

951002175

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

List-I	List-II
(A). Solar cookers	(I). Solar radiation is being collected as direct radiation and/or reflected radiation/concentrated radiation
(B). Specific heat energy for rice	(II). 1.11 kJ/kg ⁰ C
(C). Cooking energy requirement per person per day	(III). Higher will be the energy required for cooking
(D). Higher the specific energy of the cooking material	(IV). 620 kCal

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

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

96 1002176

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

List-I	List-II
(A). Pyrheliometer	(I). Heat energy used to evaporate water during drying.
(B). Sensible heat	(II). Heat energy utilization during the drying of any material.
(C). Latent heat	(III). 2260 kJ/kg.
(D). Latent heat of vaporization of water	(IV). Instrument used for solar radiation measurement.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

97 1002177

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

List-I	List-II
(A). KVIC model	(I). 2-3 time rotation of gas holder is required to break the scum in digester
(B). Cattle dung	(II). 25 kg for 1 m ³ gas per day
(C). Soap solution	(III). Provided in the gas pipe line down the slope
(D). Moisture drainer in gas pipe	(IV). Testing leakage of gas in the dome/gas holder

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

98 1002178

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

Assertion (A) :Based on discounted cash flow calculations, the NPV method gives a correct ROI.

Reason (R) : When calculating the net historical value of a project's cash flow, the NPV approach is the one most commonly utilized.

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

99 1002179

Geothermal energy is used in India in the form of

(A).Power generation

(B).Space heating

(C).Extraction and refining of borax and sulphur

(D).Refrigeration

(E). Geomethanation

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

100 1002180

What will be the overall efficiency of an ocean thermal energy conversion plant if the temperature of warm water in the surface layer is 30°C and temperature of cold water in the depth of the tropical ocean is 8°C. It can be assumed that the relative efficiency factor of the power plant is 0.5.

1. 9.63%
2. 6.33%
3. 6.66%
4. 3.63%

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

101 1002181

A tidal power plant of single basin type, has a basin area of $25 \times 10^6 \text{ m}^2$. The tide has a range of 10 m. The turbine however, stops operating when the head on it falls below 2 m. What will be the energy generated in one filling process, in kWh if the turbine generator efficiency is 75%. (Density of sea water = 10^{25} kg/m^3).

1. 2123.6×10^6
2. 2321.6×10^6
3. 2123.6×10^5
4. 3213.6×10^5

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

102 1002182

The temperature range achieved in enclosed box type solar cooker with reflector is

1. About 15 to 20°C higher than simple box type collector
2. About 20 to 25°C higher than simple box type collector
3. About 10 to 15°C higher than simple box type collector
4. About 5 to 10°C higher than simple box type collector

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

103 1002183

What is the radiative heat transfer coefficient between a wall's surface at 25 °C and the temperature of the ambient air, $T_a = 24$ °C? Consider emissivity 0.85 and Stefan-Boltzman constant of 5.67×10^{-8} Watts $m^{-2} K^{-4}$

1. 6.9 W/ m^2 °K
2. 5 W/ m^2 °K
3. 6.5 W/ m^2 °K
4. 6.3 W/ m^2 °K

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

104 1002184

Wind energy is very sensitive to the wind velocity because wind power is directly proportional to the

1. Wind velocity
2. Square of the wind velocity
3. Square root of the wind velocity
4. Cube of the wind velocity

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

105 1002185

Cellulosic biomass conversion into fuel uses which path

1. Gasification
2. Pyrolysis and gasification
3. Gasification, pyrolysis and hydrothermal processing
4. Hydrothermal processing and pyrolysis

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

106 1002186

Which one of the following has two-reversible isotherms and two reversible isobars?

1. Carnot cycle
2. Erricsson cycle
3. Rankine cycle
4. Brayton cycle

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

107 1002187

In wind mill the ratio of power delivered by rotor to the maximum power available in the wind is called

1. Coefficient of friction
2. Coefficient of gyration
3. Coefficient of performance
4. Rotor efficiency

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

108 1002188

Thermal efficiency of biogas is about

1. 60%
2. 40%
3. 35 to 50%
4. 75% or more

A1 : 1

A2 : 2

A3 : 3

		A4 : 4
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Objective Question

109	1002189	Fixed dome type biogas plant is also known as
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1. Janta gobar gas plant
2. Gramin gobar gas plant
3. Rural gobar gas plant
4. Prakash gobar gas plant

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

110	1002190	In fixed dome type biogas plant the gas holder is made of
-----	---------	---

1. Bricks and cement
2. Cement and rods
3. Steel and sand
4. Wood and RCC

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

111	1002191	A Scheffler` Solar concentrator has
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1. 1-axis tracking
2. Seasonal adjustment
3. 2-axis tracking
4. No tracking

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

112 1002192

In Parabolic Trough Collector temperature is attained upto

1. 350 °C
2. 400 °C
3. 450 °C
4. 500 °C

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

113 1002193

Temperature attained by a flat-plate collector is

1. 90 °C
2. 150 °C
3. 250 °C
4. 350 °C

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

114 1002194

In evacuated tube collectors

1. Only conduction losses are suppressed
2. Both conduction as well as convection losses are suppressed
3. Only convection losses are suppressed
4. Only radiation losses are suppressed

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

115	1002195	The special composition of the solar cells allow the electrons to flow in 1. Opposite direction 2. Multiple directions 3. Single direction 4. Random direction A1 : 1 A2 : 2 A3 : 3 A4 : 4
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Objective Question

116	1002196	India is producing Geothermal energy in 1. Mumbai 2. Kerala 3. Chennai 4. Himachal Pradesh A1 : 1 A2 : 2 A3 : 3 A4 : 4
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Objective Question

117	1002197	Select the Non-conventional energy sources from the following 1. Renewable 2. Non-renewable 3. Produced from electricity 4. Produced from heat A1 : 1 A2 : 2 A3 : 3 A4 : 4
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Objective Question

118	1002198	
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What is the rate of solar energy reaching the earth's surface?

1. 1026 W
2. 865 W
3. 1016 W
4. 1020 W

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

119 1002199

In what form is solar energy radiated from the sun?

1. Ultraviolet Radiation
2. Electromagnetic waves
3. Infrared radiation
4. Transverse waves

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

120 1002200

What percentage of energy striking the outer atmosphere of the earth reaches its surface ?

1. 30 %
2. 45 %
3. 50 %
4. 47 %

A1 : 1

A2 : 2

A3 : 3

A4 : 4