

National Testing Agency

Question Paper Name :	Renewable Energy Engineering 23rd Sep 2020 Shift 2 Set 2
Subject Name :	Renewable Energy Engineering
Creation Date :	2020-09-23 19:33:41
Duration :	120
Total Marks :	480
Display Marks:	Yes
Share Answer Key With Delivery Engine :	Yes
Actual Answer Key :	Yes

Renewable Energy Engineering

Group Number :	1
Group Id :	71087045
Group Maximum Duration :	0
Group Minimum Duration :	120
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	480
Is this Group for Examiner? :	No

Part A General Knowledge

Section Id :	710870133
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20

Number of Questions to be attempted :	20
Section Marks :	80
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	710870133
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 7108705341 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 1

Which one of the following crops is a commercial crop in Punjab and Haryana but is a subsistence crop in Orissa?

1. Tea
2. Cotton
3. Rubber
4. Rice

Options :

71087021361. 1
71087021362. 2
71087021363. 3
71087021364. 4

Question Number : 2 Question Id : 7108705342 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 1

Which of the following are the two most important wheat-growing zones of the country?

- A. Ganga-Satluj plains in the north-west
- B. Deltaic regions
- C. Black soil region of the Deccan
- D. Plains of north-east

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

- 1. Only A and B
- 2. Only B and C
- 3. Only C and D
- 4. Only A and C

Options :

- 71087021365. 1
- 71087021366. 2
- 71087021367. 3
- 71087021368. 4

Question Number : 3 Question Id : 7108705343 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Indian agriculture is typically characterized as

- 1. Land surplus, labour scarce economy
- 2. Land surplus, labour surplus economy
- 3. Land scarce, labour surplus economy
- 4. Land scarce, labour scarce economy

Options :

- 71087021369. 1

71087021370. 2

71087021371. 3

71087021372. 4

Question Number : 4 Question Id : 7108705344 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which one of the following countries is the main rival of India in tea export?

1. China
2. Japan
3. Germany
4. Sri Lanka

Options :

71087021373. 1

71087021374. 2

71087021375. 3

71087021376. 4

Question Number : 5 Question Id : 7108705345 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements

Statement A: MSP is declared by the government every year to provide incentives to the farmers for raising the production of crops.

Statement B: Buffer stock is created to distribute food grains in the deficit areas and among the poorer strata of the society at the lower price than the market price.

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

1. Both Statement A and Statement B are correct
2. Both Statement A and Statement B are incorrect
3. Statement A is correct but Statement B is incorrect
4. Statement A is incorrect but Statement B is correct

Options :

71087021377. 1

71087021378. 2

71087021379. 3

71087021380. 4

Question Number : 6 Question Id : 7108705346 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following is a global association of nations of the world to help cooperation in international law, security, economic development and social equity?

1. United Nations Organization
2. International Monetary Fund
3. World Bank
4. World Health Organization

Options :

- 71087021381. 1
- 71087021382. 2
- 71087021383. 3
- 71087021384. 4

Question Number : 7 Question Id : 7108705347 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Under the Ganga Action Plan Phase II, pollution abatement works are being taken up in how many towns?

- 1. 57
- 2. 65
- 3. 52
- 4. 69

Options :

- 71087021385. 1
- 71087021386. 2
- 71087021387. 3
- 71087021388. 4

Question Number : 8 Question Id : 7108705348 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following statements is **incorrect**?

- 1. The highest number of pigs in the world are found in India
- 2. Uttar Pradesh provides largest amount of pork
- 3. Assam has the largest number of pork producing pigs
- 4. Pork constitutes about 7.6% of the total meat produced in India

Options :

71087021389. 1
71087021390. 2
71087021391. 3
71087021392. 4

Question Number : 9 Question Id : 7108705349 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 1

Which type of N-fertilizer is suitable for water-logged soils?

1. Zinc Phosphate
2. Ammonium Sulphate
3. Calcium
4. Potassium Nitrate

Options :

71087021393. 1
71087021394. 2
71087021395. 3
71087021396. 4

Question Number : 10 Question Id : 7108705350 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 1

The famous Bailadila range of hills in the Bastar district of Chhattisgarh is famous for its

1. Bauxite deposits
2. Manganese deposits
3. Copper deposits
4. High-grade haematite deposits

Options :

71087021397. 1

71087021398. 2

71087021399. 3

71087021400. 4

Question Number : 11 Question Id : 7108705351 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

A farmer wishes to start a 100 sq. m rectangular vegetable garden. Since he has only 30m barbed wire, he fences three sides of the garden letting his house compound wall act as the fourth side fencing. What is the dimension of the garden?

1. 15 m x 6.67m
2. 20 m x 5 m
3. 30 m x 3.33 m
4. 40 m x 2.5 m

Options :

71087021401. 1

71087021402. 2

71087021403. 3

71087021404. 4

Question Number : 12 Question Id : 7108705352 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

In which one of the following industries, the consumption of natural rubber is the largest?

1. Auto tyres and tubes
2. Footwear
3. Dipped goods
4. Latex foam

Options :

71087021405. 1
71087021406. 2
71087021407. 3
71087021408. 4

Question Number : 13 Question Id : 7108705353 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which one of the following countries was the partner country of 34th Surajkund International Crafts Fair held in Haryana?

1. China
2. Nepal
3. Bhutan
4. Uzbekistan

Options :

71087021409. 1
71087021410. 2
71087021411. 3
71087021412. 4

Question Number : 14 Question Id : 7108705354 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Nobel laureate Abhijit Vinayak Banerjee was conferred the honorary Doctor of Letters (D. Litt.) by which University?

1. University of Delhi
2. University of Kolkata
3. University of Mumbai
4. University of Hyderabad

Options :

- 71087021413. 1
- 71087021414. 2
- 71087021415. 3
- 71087021416. 4

Question Number : 15 Question Id : 7108705355 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Where is the headquarters of European Union?

- 1. Geneva, Switzerland
- 2. Washington D.C., USA
- 3. New York, US
- 4. Brussels, Belgium

Options :

- 71087021417. 1
- 71087021418. 2
- 71087021419. 3
- 71087021420. 4

Question Number : 16 Question Id : 7108705356 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which of the following would be deficient if one finds high somatic cell count in the cow's milk?

- 1. Butterfat
- 2. Whey protein
- 3. Casein
- 4. Trace minerals

Options :

- 71087021421. 1
- 71087021422. 2
- 71087021423. 3
- 71087021424. 4

Question Number : 17 Question Id : 7108705357 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Who was the first administrator-statesman to attempt planning as a means for economic development?

- 1. C. Rajagopalachari
- 2. V. T. Krishnamachari
- 3. M. Viswesvarayya
- 4. Sir C. P. Ramaswami Aiyar

Options :

- 71087021425. 1
- 71087021426. 2
- 71087021427. 3
- 71087021428. 4

Question Number : 18 Question Id : 7108705358 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Amazon rainforest span over nine countries. In August 2019, in which country did a deadly fire broke out in the Amazon forest?

- 1. Brazil
- 2. Venezuela
- 3. Colombia
- 4. Argentina

Options :

- 71087021429. 1
- 71087021430. 2
- 71087021431. 3
- 71087021432. 4

Question Number : 19 Question Id : 7108705359 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Economic liberalization in India started with

- 1. Sustainable changes in industrial licensing policy
- 2. The convertibility of the Indian Rupee
- 3. Significant reduction of tax rates
- 4. Changes in procedural formalities for FDI

Options :

- 71087021433. 1
- 71087021434. 2
- 71087021435. 3
- 71087021436. 4

Question Number : 20 Question Id : 7108705360 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The term 'Delimitation' which was in news recently is associated with which process?

- 1. Fixing the limit of Income tax
- 2. Fixing limits of Affordable housing
- 3. Fixing limits of Territorial constituencies
- 4. Fixing limits of Chairpersons salary

Options :

- 71087021437. 1

71087021438. 2
71087021439. 3
71087021440. 4

Part B Core Agricultural Engineering and Technology

Section Id :	710870134
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	200
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	710870134
Question Shuffling Allowed :	Yes

**Question Number : 21 Question Id : 7108705361 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is
Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 1**

Major constituents of gunmetal are

1. Copper and Tin
2. Copper and Phosphorous
3. Phosphorous and Manganese
4. Copper and Cobalt

Options :

71087021441. 1
71087021442. 2

71087021443. 3

71087021444. 4

Question Number : 22 Question Id : 7108705362 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The bevel angle of an agricultural disc is measured using a

1. Micrometer
2. Compass
3. Vernier Caliper
4. Combination set

Options :

71087021445. 1

71087021446. 2

71087021447. 3

71087021448. 4

Question Number : 23 Question Id : 7108705363 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The biogas requirement per person per day for cooking is about

1. 50 l
2. 100 l
3. 225 l
4. 500 l

Options :

71087021449. 1

71087021450. 2

71087021451. 3

71087021452. 4

Question Number : 24 Question Id : 7108705364 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The dimension of angular acceleration is

1. LT^{-2}
2. T^{-2}
3. LT^{-1}
4. L^2T^{-2}

Options :

71087021453. 1
71087021454. 2
71087021455. 3
71087021456. 4

Question Number : 25 Question Id : 7108705365 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

A direct-acting pressure relief valve is used in the circuit operating at

1. High Volume Flow Rate
2. Low Pressure
3. High Pressure and High Volume
4. Low Volume Low Flow Rate

Options :

71087021457. 1
71087021458. 2
71087021459. 3
71087021460. 4

Question Number : 26 Question Id : 7108705366 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The commonly used seed metering system on a maize planter is

1. Fluted roller
2. Internal double run
3. Inclined plate with cells
4. Cup feed mechanism

Options :

71087021461. 1

71087021462. 2

71087021463. 3

71087021464. 4

Question Number : 27 Question Id : 7108705367 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

In an agricultural operation, UAV is most suitable for

1. Seeding
2. Mechanical weeding
3. Spaying
4. Land Levelling

Options :

71087021465. 1

71087021466. 2

71087021467. 3

71087021468. 4

Question Number : 28 Question Id : 7108705368 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Feed capacity of a 3 bottom 35cm mould board plough operating at a speed of 3km per hour with a field efficiency of 70% is

1. 1.05 ha/hr
2. 0.22 ha/hr
3. 0.10 ha/hr
4. 0.70 ha/hr

Options :

71087021469. 1
71087021470. 2
71087021471. 3
71087021472. 4

Question Number : 29 Question Id : 7108705369 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Disc angle in a standard disc plough is

1. 12-15 degrees
2. 15-22 degrees
3. 32-40 degrees
4. 42-45 degrees

Options :

71087021473. 1
71087021474. 2
71087021475. 3
71087021476. 4

Question Number : 30 Question Id : 7108705370 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Safe noise level (dB) for an agricultural worker is

1. 80
2. 100
3. 120
4. 140

Options :

71087021477. 1
71087021478. 2
71087021479. 3
71087021480. 4

Question Number : 31 Question Id : 7108705371 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which of the following statements is true with respect to sieve analysis of soil samples?

1. $D_{60} < D_{10}$
2. $D_{60} > D_{10}$
3. $D_{60} = D_{10}$
4. None of the above

Options :

71087021481. 1
71087021482. 2
71087021483. 3
71087021484. 4

Question Number : 32 Question Id : 7108705372 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

On a specific energy diagram, two depths of flow for a particular specific energy are known as

1. Normal depth
2. Critical depth
3. Alternate depths
4. Variable depths

Options :

71087021485. 1
71087021486. 2
71087021487. 3
71087021488. 4

Question Number : 33 Question Id : 7108705373 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

For a rectangular channel, 'd' is the depth and 'B' is the base width. The channel section will be the most hydraulically efficient when

1. $B = 4d$
2. $B = 2d$
3. $B = d$
4. $2B = d$

Options :

71087021489. 1
71087021490. 2
71087021491. 3
71087021492. 4

Question Number : 34 Question Id : 7108705374 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which of the following formulae is used to estimate the peak rate of runoff from an area?

1. William's formula
2. Manning's formula
3. Chézy's formula
4. Rational formula

Options :

71087021493. 1
71087021494. 2
71087021495. 3
71087021496. 4

Question Number : 35 Question Id : 7108705375 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which of the following could be measured with lysimeters?

1. Interception losses
2. Flow velocity in a stream
3. Flow rate in pipes
4. Evapotranspiration

Options :

71087021497. 1
71087021498. 2
71087021499. 3
71087021500. 4

Question Number : 36 Question Id : 7108705376 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The time of concentration in an area is determined by using the relationship proposed by

1. Wischmeier and Smith
2. Blaney and Criddle
3. Darcy and Weisbach
4. Kirpitch

Options :

71087021501. 1
71087021502. 2
71087021503. 3
71087021504. 4

Question Number : 37 Question Id : 7108705377 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Contour bunds are recommended for areas where

1. Rainfall is low and soil is light
2. Rainfall is high and soil is light
3. Rainfall is light and soil is heavy
4. None of the above

Options :

71087021505. 1
71087021506. 2
71087021507. 3
71087021508. 4

Question Number : 38 Question Id : 7108705378 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Soil taxonomy deals with which one of the following?

1. Principles of Soil Classification
2. Principles of Agricultural Taxation
3. Principles of Soil degradation
4. Principles of Soil Conservation

Options :

71087021509. 1
71087021510. 2
71087021511. 3
71087021512. 4

Question Number : 39 Question Id : 7108705379 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following is NOT a type of storage in dams?

1. Regular storage
2. Temporary storage
3. Dead storage
4. Live storage

Options :

71087021513. 1
71087021514. 2
71087021515. 3
71087021516. 4

Question Number : 40 Question Id : 7108705380 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following is the most efficient method of irrigation?

1. Drip irrigation
2. Furrow irrigation
3. Check basin irrigation
4. Sprinkler Irrigation

Options :

71087021517. 1
71087021518. 2
71087021519. 3
71087021520. 4

Question Number : 41 Question Id : 7108705381 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The sphericity of a grain having length, breadth, thickness (8mm, 4mm, 2mm respectively) is

1. 0.4
2. 0.5
3. 0.6
4. 0.7

Options :

71087021521. 1
71087021522. 2
71087021523. 3
71087021524. 4

Question Number : 42 Question Id : 7108705382 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The most important factor which affects the shelf-life of food products is

1. Moisture content
2. Water activity
3. Fat content
4. Protein content

Options :

71087021525. 1
71087021526. 2
71087021527. 3
71087021528. 4

Question Number : 43 Question Id : 7108705383 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

What quantities of pineapple juice (having 15% sugar content) and sugar syrup (having 40% sugar content) are needed to produce 50 kg of fruit squash containing 20% sugar?

1. 40 kg pineapple juice and 10 kg sugar syrup
2. 30 kg pineapple juice and 20 kg sugar syrup
3. 25 kg pineapple juice and 25 kg sugar syrup
4. 20 kg pineapple juice and 30 kg sugar syrup

Options :

71087021529. 1
71087021530. 2
71087021531. 3
71087021532. 4

Question Number : 44 Question Id : 7108705384 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which of the following separators are used for separation of materials based on their relative length?

1. Disk separator and Indented cylinder separator
2. Spiral and Disk separator
3. Disk and Cyclone separator
4. Spiral and Specific gravity separator

Options :

71087021533. 1
71087021534. 2
71087021535. 3
71087021536. 4

Question Number : 45 Question Id : 7108705385 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

In stainless steel 316 (18/10), the 18/10 represents

1. 18% Ni and 10% Cr
2. 18% Cr and 10% Cu
3. 18% Cu and 10% Al
4. 18% Cr and 10% Ni

Options :

71087021537. 1
71087021538. 2
71087021539. 3
71087021540. 4

Question Number : 46 Question Id : 7108705386 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Index organism for commercial processing of canned products is

1. *Campylobacter jejuni*
2. *Clostridium perfringens*
3. *Clostridium botulinum*
4. *Staphylococcus aureus*

Options :

71087021541. 1
71087021542. 2
71087021543. 3
71087021544. 4

Question Number : 47 Question Id : 7108705387 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

In cold regions, where could the deposition of water occur in metal storage containers?

1. Bottom
2. Top
3. Centre
4. Throughout the container

Options :

71087021545. 1
71087021546. 2
71087021547. 3
71087021548. 4

Question Number : 48 Question Id : 7108705388 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following is the most important objective of process control?

1. To reduce variability in final product
2. To utilize resources effectively
3. To maximize production
4. To reduce contamination

Options :

71087021549. 1

71087021550. 2

71087021551. 3

71087021552. 4

Question Number : 49 Question Id : 7108705389 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Inverse transducer converts

1. Solar energy to any form of energy
2. Electrical to any form of energy
3. Mechanical energy to electrical energy
4. Mechanical energy to light

Options :

71087021553. 1

71087021554. 2

71087021555. 3

71087021556. 4

Question Number : 50 Question Id : 7108705390 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

In India, which of the following sets the permissible limits of additives in fruit beverages?

A. FSSAI

B. Fruit Products Order

C. BIS

Select the most appropriate answer from the options given below?

1. A and B

2. B only

3. A only

4. C only

Options :

71087021557. 1

71087021558. 2

71087021559. 3

71087021560. 4

Question Number : 51 Question Id : 7108705391 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Given below are two statements

Statement I: Biogas can be utilized effectively for cooking, lighting, operating engines and power generation applications.

Statement II: Bio digestion process can be done only on wet fermentation.

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.

Options :

71087021561. 1

71087021562. 2

71087021563. 3

71087021564. 4

Question Number : 52 Question Id : 7108705392 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I: Fluidized bed gasification system can handle a wide range of high moisture feedstocks.

Statement II: Fluidization is the key concept to high throughput and low turndown ratio (TDR).

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

Options :

71087021565. 1

71087021566. 2

71087021567. 3

71087021568. 4

Question Number : 53 Question Id : 7108705393 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I: Temperature of carbonization plays an important role in deciding the quality of charcoal.

Statement II: The calorific value of producer gas can be affected by the chemical composition of the feedstock, air velocity, thickness of bed and particle size of the feed.

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.

Options :

71087021569. 1

71087021570. 2

71087021571. 3

71087021572. 4

Question Number : 54 Question Id : 7108705394 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Arrange in sequence the steps involved in designing a solar PV powered water pumping system.

- A. Determine the size and number of PV modules required.
- B. Determine the solar radiation available at the given location.
- C. Determine the total dynamic head.
- D. Determine the amount of water required per day.
- E. Determine the hydraulic energy required per day to pump the required amount of water.

Choose the correct answer from the options given below:

- 1. A, B, C, D & E
- 2. B, C, D, E & A
- 3. C, E, A, B & D
- 4. D, C, E, B & A

Options :

71087021573. 1

71087021574. 2

71087021575. 3

71087021576. 4

Question Number : 55 Question Id : 7108705395 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

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

List - I	List - II
A. Efficiency of flat plate collector	I. 6-10%
B. Optical efficiency of concentrating collector	II. 15-25%
C. Collection efficiency of solar pond	III. 40%
D. Efficiency of CdTe Solar cell	IV. 65%

Choose the correct answer from the options given below:

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

Options :

71087021577. 1
71087021578. 2
71087021579. 3
71087021580. 4

Question Number : 56 Question Id : 7108705396 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The maximum theoretical power co-efficient in a wind rotor is

1. 0.593
2. 0.953
3. 27/16
4. 0.35

Options :

71087021581. 1
71087021582. 2
71087021583. 3

71087021584. 4

Question Number : 57 Question Id : 7108705397 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**.

Assertion A: Enzymes are usually protein substances which act as biocatalysts.

Reason R: Enzymes lower the activation energy of the reaction.

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.

Options :

- 71087021585. 1
- 71087021586. 2
- 71087021587. 3
- 71087021588. 4

Question Number : 58 Question Id : 7108705398 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I: In primary batteries, the chemical reactions are non-reversible.

Statement II: For vehicle propulsion, lead-acid batteries are preferred due to their higher specific energy.

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.

Options :

71087021589. 1

71087021590. 2

71087021591. 3

71087021592. 4

Question Number : 59 Question Id : 7108705399 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

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

List - I	List - II
A. Stroboscope	I. Flue gas analysis
B. Psychrometer	II. Light
C. Fyrite	III. R.P.M.
D. Luxmeter	IV. Humidity

Choose the correct answer from the options given below:

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

Options :

71087021593. 1

71087021594. 2

71087021595. 3

71087021596. 4

Question Number : 60 Question Id : 7108705400 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Arrange the steps involved in the Critical Path Method in sequence

- A. Determine the sequence of activities
- B. Specify the individual activities
- C. Estimate activity completion time
- D. Draw the network diagram
- E. Identify the critical path

Choose the correct answer from the options given below:

- 1. A, B, D, E, C
- 2. B, A, D, C, E
- 3. C, B, A, E, D
- 4. D, B, A, C, E

Options :

- 71087021597. 1
- 71087021598. 2
- 71087021599. 3
- 71087021600. 4

Question Number : 61 Question Id : 7108705401 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Tensiometers installed are used for measuring

- 1. Wilting point
- 2. Capillary potential
- 3. Osmatic potential
- 4. Diffusivity

Options :

- 71087021601. 1
- 71087021602. 2
- 71087021603. 3
- 71087021604. 4

Question Number : 62 Question Id : 7108705402 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Arrange the following crops in increasing order of effective root zone depth

- A. Sugarcane
- B. Rice
- C. Maize
- D. Wheat

Choose the correct answer from the options given below:

- 1. A, B, C, D
- 2. B, A, C, D
- 3. B, D, C, A
- 4. D, C, B, A

Options :

- 71087021605. 1
- 71087021606. 2
- 71087021607. 3
- 71087021608. 4

Question Number : 63 Question Id : 7108705403 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

In open channel flow, if the depth of flow is the same at every section of the channel, then the flow is known as

1. Unsteady flow
2. Uniform flow
3. Varied flow
4. Gradually varied flow

Options :

71087021609. 1
71087021610. 2
71087021611. 3
71087021612. 4

Question Number : 64 Question Id : 7108705404 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**.

Assertion A: After 1978, irrigation projects in India are classified on the basis of culturable command area

Reason R: Major Irrigation projects have a culturable command area greater than 5000 ha.

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.

Options :

71087021613. 1
71087021614. 2

71087021615. 3

71087021616. 4

Question Number : 65 Question Id : 7108705405 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The value of transmissibility (litres per day per meter) for an irrigation well must be equal to or greater than

1. 200
2. 20
3. 2000
4. 20,000

Options :

71087021617. 1

71087021618. 2

71087021619. 3

71087021620. 4

Question Number : 66 Question Id : 7108705406 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The flow in a border strip is a case of spatially varied

1. steady open channel flow with decreasing discharge.
2. unsteady open channel flow with decreasing discharge.
3. steady open channel flow with increasing discharge.
4. unsteady open channel flow with increasing discharge.

Options :

71087021621. 1

71087021622. 2

71087021623. 3

71087021624. 4

Question Number : 67 Question Id : 7108705407 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The most common cladding/covering material used for a poly house is:

1. 100 micron PVC film.
2. 200 micron UV stabilized polyfilm.
3. 200 micron HDPE film.
4. 100 micron HDPE film.

Options :

71087021625. 1
71087021626. 2
71087021627. 3
71087021628. 4

Question Number : 68 Question Id : 7108705408 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Secondary salinization occurs in:

1. Irrigated Command in Arid region only.
2. Irrigated Command in Semi-Arid Region only.
3. Both Irrigated command in Arid and Semi-arid Regions.
4. Irrigated Command in Humid region only.

Options :

71087021629. 1
71087021630. 2
71087021631. 3
71087021632. 4

Question Number : 69 Question Id : 7108705409 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List - I	List - II
A. Mass curve	I. Always a falling curve
B. Thiessen method	II. Relationship between accumulated rainfall and time
C. DAD curve	III. Average rainfall depth over an area
D. Hyetograph	IV. Graph between rainfall intensity and time

Choose the correct answer from the options below:

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

Options :

71087021633. 1

71087021634. 2

71087021635. 3

71087021636. 4

Question Number : 70 Question Id : 7108705410 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Triangular Irrigation Network (TIN) is a

1. Roster data
2. Vector data
3. Transportation data
4. None of the above

Options :

71087021637. 1

71087021638. 2

71087021639. 3

71087021640. 4

Part C Renewable Energy Engineering

Section Id :	710870135
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	200
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	710870135
Question Shuffling Allowed :	Yes

Question Number : 71 Question Id : 7108705411 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following components is crucial in designing paraboloid dish concentrators?

1. Reflector
2. Receiver
3. Supporting structure
4. Tracking system

Options :

71087021641. 1
71087021642. 2
71087021643. 3
71087021644. 4

Question Number : 72 Question Id : 7108705412 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

How much electricity is saved annually by installing 100 lpd solar water heater instead of an electricity geyser (Ambient Temperature 30°C)?

1. 1200 kWh
2. 1500 kWh
3. 1800 kWh
4. 2000 kWh

Options :

71087021645. 1
71087021646. 2
71087021647. 3
71087021648. 4

Question Number : 73 Question Id : 7108705413 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The efficiency (%) of majority of solar panels is in the range of

1. 10-15
2. 20-30
3. 30-45
4. 45-60

Options :

71087021649. 1
71087021650. 2
71087021651. 3
71087021652. 4

Question Number : 74 Question Id : 7108705414 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Landfill technology is used to reduce

1. Volume of MSW
2. Calorific value of landfill gas
3. Leachate reaction
4. Air pollution

Options :

71087021653. 1
71087021654. 2
71087021655. 3
71087021656. 4

Question Number : 75 Question Id : 7108705415 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

A biogas plant (40 days HRT) is suitable to fulfil the cooking needs of a family of 10 members. What would be the value of A, B and C, respectively, if

A = No. of animals required (waste available 10 kg/day/animal)

B = Volume (m^3) of the digester

C = Daily biogas requirement (m^3)

1. 10, 6, 4
2. 15, 8, 4
3. 20, 6, 4
4. 10, 8, 4

Options :

71087021657. 1
71087021658. 2
71087021659. 3
71087021660. 4

Question Number : 76 Question Id : 7108705416 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Gas-liquid separation is applicable in which of the following reactors?

1. Batch type biodigester
2. Upflow anaerobic sludge blanket (UASB) reactor
3. Aerobic contact process reactor
4. Anaerobic filter

Options :

71087021661. 1
71087021662. 2
71087021663. 3

71087021664. 4

Question Number : 77 Question Id : 7108705417 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which of the following mechanism occurs in the boiler sections, which are directly exposed to flame irradiation and involves stickiness, ash melting and sintering?

1. Fouling
2. Slagging
3. Sintering
4. Co-firing

Options :

- 71087021665. 1
- 71087021666. 2
- 71087021667. 3
- 71087021668. 4

Question Number : 78 Question Id : 7108705418 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

What is the equivalence ratio for thermochemical gasification process?

1. 0.1-0.2
2. 0.2-0.4
3. 0.6-0.75
4. >1

Options :

- 71087021669. 1
- 71087021670. 2

71087021671. 3

71087021672. 4

Question Number : 79 Question Id : 7108705419 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which biodiesel blend can be used in diesel engines without any modification?

1. B10

2. B20

3. B50

4. B80

Options :

71087021673. 1

71087021674. 2

71087021675. 3

71087021676. 4

Question Number : 80 Question Id : 7108705420 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

A widely used catalyst in the transesterification process is

1. Alkaline

2. Ultraviolet light

3. Enzymes

4. Acids

Options :

71087021677. 1

71087021678. 2

71087021679. 3

71087021680. 4

Question Number : 81 Question Id : 7108705421 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Another term for biodiesel is

1. Methyl ester
2. Alcohol
3. Vegetable oil
4. Glycerin

Options :

71087021681. 1
71087021682. 2
71087021683. 3
71087021684. 4

Question Number : 82 Question Id : 7108705422 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which one of the following is **incorrect** about power efficiency?

1. Supplementary firing makes it possible to lower the power coefficient
2. Combine cycle should be employed only where the power coefficient is high
3. Lowering supplementary heat largely would improve the thermodynamic advantage of the combined cycle
4. If the power coefficient is too high, the use of the steam turbine becomes less important and the steam process becomes waste heat boiler

Options :

71087021685. 1
71087021686. 2
71087021687. 3
71087021688. 4

Question Number : 83 Question Id : 7108705423 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

For a 20 m diameter wind turbine, typically the tower height is

1. 15-20 m
2. 20-30 m
3. 30-40 m
4. 40-45 m

Options :

71087021689. 1
71087021690. 2
71087021691. 3
71087021692. 4

Question Number : 84 Question Id : 7108705424 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The ratio of the projected area of the rotor on a perpendicular plane to the swept area of the rotor is known as

1. Rotor coefficient
2. Interfacial area ratio
3. Blade element factor
4. Solidity

Options :

71087021693. 1
71087021694. 2
71087021695. 3
71087021696. 4

Question Number : 85 Question Id : 7108705425 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The Lineweaver-Burk plot lines of enzyme inhibited and non-inhibited reactions, have the same slope in case of

1. Uncompetitive inhibition
2. Competitive inhibition
3. Non-competitive inhibition
4. Substrate inhibition

Options :

71087021697. 1
71087021698. 2
71087021699. 3
71087021700. 4

Question Number : 86 Question Id : 7108705426 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

At temperatures higher than the optimum temperature, catalytic activity of enzymes will reduce. This is mainly because the higher temperature

1. Kills microorganisms
2. Modifies the pH of the substrate
3. Reduces the solubility of substrate
4. Denatures the proteins

Options :

71087021701. 1
71087021702. 2
71087021703. 3
71087021704. 4

Question Number : 87 Question Id : 7108705427 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

During the stationary phase of batch culture growth,

1. Net growth rate is "one"
2. Growth rate is equal to death rate
3. Cells are metabolically inactive
4. There is no incidence of production of secondary metabolites

Options :

- 71087021705. 1
- 71087021706. 2
- 71087021707. 3
- 71087021708. 4

Question Number : 88 Question Id : 7108705428 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Calculate the wavelength (m) of a progressive ocean wave with a period of 10 sec

1. 15.6 m
2. 56.16 m
3. 156 m
4. 56160 m

Options :

- 71087021709. 1
- 71087021710. 2
- 71087021711. 3
- 71087021712. 4

Question Number : 89 Question Id : 7108705429 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Glauber's salt is

1. $\text{Na}(\text{OH})_3$
2. $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$
3. $\text{Fe}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$
4. $\text{Mg}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$

Options :

71087021713. 1

71087021714. 2

71087021715. 3

71087021716. 4

Question Number : 90 Question Id : 7108705430 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

In compressors, the ratio of power consumption to the volume of air delivered, at ambient conditions is known as

1. Compression ratio
2. Isothermal power
3. Volumetric efficiency
4. Specific power requirement

Options :

71087021717. 1

71087021718. 2

71087021719. 3

71087021720. 4

Question Number : 91 Question Id : 7108705431 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The absolute pressure at a point minus the reference atmospheric pressure during the operation of the fan, is known as

1. Static pressure
2. Dynamic pressure
3. Total pressure
4. Traverse pressure

Options :

- 71087021721. 1
- 71087021722. 2
- 71087021723. 3
- 71087021724. 4

Question Number : 92 Question Id : 7108705432 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Among the following fuels, the stoichiometric air requirement is higher for

1. Diesel
2. Coal
3. Natural gas
4. Wood

Options :

- 71087021725. 1
- 71087021726. 2
- 71087021727. 3
- 71087021728. 4

Question Number : 93 Question Id : 7108705433 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

In which model the rules governing the fluid flow are assumed to be similar to those for electric flow?

1. Stochastic
2. Process analog
3. Scale analog
4. Dynamic

Options :

71087021729. 1
71087021730. 2
71087021731. 3
71087021732. 4

Question Number : 94 Question Id : 7108705434 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following statistical analysis software and languages is in the public domain and open source?

1. MS-Excel
2. SPSS
3. SAS
4. R

Options :

71087021733. 1
71087021734. 2
71087021735. 3
71087021736. 4

Question Number : 95 Question Id : 7108705435 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

ESCO stands for

1. Energy Saving and Conservation Opportunities
2. Energy Service Companies
3. Environment Safety Considerations
4. Energy Saving Consultant

Options :

71087021737. 1

71087021738. 2

71087021739. 3

71087021740. 4

Question Number : 96 Question Id : 7108705436 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: Biogas is a substitute for conventional engine fuels without modification in both SI and CI engines

Reason R: SI engines develop 85% rated power, whereas CI engines develop full power on biogas

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

Options :

71087021741. 1
71087021742. 2
71087021743. 3
71087021744. 4

Question Number : 97 Question Id : 7108705437 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: The duration of bright sunshine in a day is measured by a sunshine recorder

Reason R: The measurement of solar radiation over a period of time at a location is the best approach for estimating average radiation data for the location

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

Options :

71087021745. 1
71087021746. 2
71087021747. 3
71087021748. 4

Question Number : 98 Question Id : 7108705438 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: Penicillin is a secondary metabolite and is non-growth associated product

Reason R: Non-growth associated product formation takes place during the lag phase when the growth rate is zero

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

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

Options :

71087021749. 1

71087021750. 2

71087021751. 3

71087021752. 4

Question Number : 99 Question Id : 7108705439 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: In power plants, a higher load factor is desirable

Reason R: Higher load factor results in a greater average load, hence lower the overall cost of power supply

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

Options :

71087021753. 1

71087021754. 2

71087021755. 3

71087021756. 4

Question Number : 100 Question Id : 7108705440 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Arrange the following steps in a typical landfill gas recovery process in sequence

- A. Gas collection
- B. Filtering
- C. Gas compressor
- D. Chiller
- E. Gas monitoring

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

- 1. A, B, C, D, E
- 2. A, B, C, E, D
- 3. A, B, E, D, C
- 4. A, E, D, C, B

Options :

- 71087021757. 1
- 71087021758. 2
- 71087021759. 3
- 71087021760. 4

Question Number : 101 Question Id : 7108705441 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Arrange the steps in the process of bioethanol production from a starchy substrate in sequence:

- A. Saccharification
- B. Fermentation
- C. Distillation
- D. Dehydration
- E. Grinding

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

- 1. A, B, C, D, E
- 2. D, E, A, B ,C
- 3. E, A, B ,C, D
- 4. D, E, A, C, B

Options :

- 71087021761. 1
- 71087021762. 2
- 71087021763. 3
- 71087021764. 4

Question Number : 102 Question Id : 7108705442 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Arrange the typical wind turbine operating states in sequence:

- A. Start
- B. System check
- C. Power production
- D. Grid connection
- E. Grid disconnection

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

- 1. A, C, B, D, E
- 2. A, B, D, C, E
- 3. B, A, D, C, E
- 4. B, A, E, D, C

Options :

- 71087021765. 1
- 71087021766. 2
- 71087021767. 3
- 71087021768. 4

Question Number : 103 Question Id : 7108705443 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Arrange the order of flow of water in high head power plants in sequence:

- A. Tunnel
- B. Reservoir
- C. Penstock
- D. Valve house
- E. Powerhouse

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

- 1. A, B, C, E, D
- 2. A, C, B, D, E
- 3. B, A, C, E, D
- 4. B, A, D, C, E

Options :

- 71087021769. 1
- 71087021770. 2
- 71087021771. 3
- 71087021772. 4

Question Number : 104 Question Id : 7108705444 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Arrange the steps in energy action planning in sequence:

- A. Top management commitment and Support
- B. Energy Policy and Planning
- C. Assessing Energy Profile and Establishing Base Line
- D. Evaluating Energy Performance
- E. Implementation

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

- 1. A, B, D, C, E
- 2. A, C, B, E, D
- 3. C, B, D, E, A
- 4. C, A, D, B, E

Options :

- 71087021773. 1
- 71087021774. 2
- 71087021775. 3
- 71087021776. 4

Question Number : 105 Question Id : 7108705445 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements

Statement I: The most appropriate way of using agriculture biomass in large scale combustion system is co-firing or co-combustion with conventional coal

Statement II: Unlike coal, the ash in most agricultural biomass tends to melt at the low operating temperatures of the combustion system

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

Options :

71087021777. 1

71087021778. 2

71087021779. 3

71087021780. 4

Question Number : 106 Question Id : 7108705446 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements

Statement I: National Biofuel Policy proposes an indicative target of 40% biofuel blending (both for biodiesel and bioethanol)

Statement II: Of the 175 GW renewable power target in India (by 2022), the biomass accounts for 5 GW

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

Options :

71087021781. 1

71087021782. 2

71087021783. 3

71087021784. 4

Question Number : 107 Question Id : 7108705447 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements

Statement I: Seeds of different crops coated with bio digested slurry have a better germination rate

Statement II: Biogas plant slurry helps in promoting algae, which serves as food to fish in an aquaculture system

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

Options :

71087021785. 1

71087021786. 2

71087021787. 3

71087021788. 4

Question Number : 108 Question Id : 7108705448 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements

Statement I: In wastewater treatment applications, activated carbon is widely used because of its larger internal surface area per unit weight

Statement II: Chromatography separates the mixture into components by passing a fluid mixture through a bed of adsorbent material

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

Options :

71087021789. 1

71087021790. 2

71087021791. 3

71087021792. 4

Question Number : 109 Question Id : 7108705449 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements

Statement I: On daily revolving of the moon around the earth, ocean water on the moon side has high tide and other side has low tides

Statement II: Spring tides are minimum tidal range formed during the first quarter and third quarter moon

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

Options :

71087021793. 1

71087021794. 2

71087021795. 3

71087021796. 4

Question Number : 110 Question Id : 7108705450 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which of the following are aquatic biomass resources for energy generation?

- A. Water hyacinth
- B. Algae
- C. Ocean kelp
- D. Sugarcane bagasse
- E. Rice or wheat crop straw

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

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

Options :

- 71087021797. 1
- 71087021798. 2
- 71087021799. 3
- 71087021800. 4

Question Number : 111 Question Id : 7108705451 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which of the following technologies are used for combusting refuse-derived biomass?

- A. Fluidised bed combustion
- B. Cofiring with coal
- C. Spreader stocker system
- D. MSW incineration
- E. Gasification

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

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

Options :

- 71087021801. 1
- 71087021802. 2
- 71087021803. 3
- 71087021804. 4

Question Number : 112 Question Id : 7108705452 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

For Stoke's flow, the concentration of the suspended biomass can be related to the liquid flow velocity in a fluidized bed by:

- A. Microbial density
- B. Terminal velocity
- C. Biological catalyst particles
- D. Organism concentration
- E. Area of the reactor

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

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

Options :

- 71087021805. 1
- 71087021806. 2
- 71087021807. 3
- 71087021808. 4

Question Number : 113 Question Id : 7108705453 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which of the following factors are taken into account to arrive at the optimum size of a biogas plant?

- A. Daily loading
- B. HRT
- C. BOD
- D. C:N ratio
- E. pH and temperature

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

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

Options :

- 71087021809. 1
- 71087021810. 2
- 71087021811. 3
- 71087021812. 4

Question Number : 114 Question Id : 7108705454 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The power train of a windmill consists of :

- A. High-speed shaft
- B. Gearbox
- C. Low-speed shaft
- D. Rotor
- E. Generator

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

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

Options :

- 71087021813. 1
- 71087021814. 2
- 71087021815. 3
- 71087021816. 4

Question Number : 115 Question Id : 7108705455 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

In a power plant :

- A. Plant operating factor is the ratio of the duration during which the plant is in actual service to the total duration
- B. Load curve shows the variation of power with time in a power plant
- C. Utility factor is the ratio of units of electricity generated per year to the plant capacity
- D. If the diversity factor is higher, the maximum demand of the plant will also be higher
- E. Firm power is the excess power generated than the peak demand

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

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

Options :

- 71087021817. 1
- 71087021818. 2
- 71087021819. 3
- 71087021820. 4

Question Number : 116 Question Id : 7108705456 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The objectives of energy management are:

- A. Achieve optimum energy utilization
- B. Minimum energy cost
- C. Maintain optimum energy procurement
- D. Energy-saving by lowering the production
- E. Minimize environmental effect

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

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

Options :

- 71087021821. 1
- 71087021822. 2
- 71087021823. 3
- 71087021824. 4

Question Number : 117 Question Id : 7108705457 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The convective heat transfer coefficient at the top cover of FPC is derived by :

- A. $5.7 - 3.8 V_{\infty}$
- B. $5.7 + 3.8 V_{\infty}$
- C. $8.55 + 2.56 V_{\infty}$
- D. $8.55 - 2.56 V_{\infty}$
- E. $U_l A_p (T_{pm} - T_a)$

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

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

Options :

- 71087021825. 1
- 71087021826. 2
- 71087021827. 3
- 71087021828. 4

Question Number : 118 Question Id : 7108705458 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

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

List I	List II
Solar cell	Parameters
A. Short circuit current	I. P_m/P_i
B. Open circuit voltage	II. $V_m I_m / V_{OC} I_{SC}$
C. Fill factor	III. $V_{OC} > V_m$
D. Efficiency	IV. $I_{SC} > I_m$

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

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

Options :

71087021829. 1
71087021830. 2
71087021831. 3
71087021832. 4

Question Number : 119 Question Id : 7108705459 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Match **List I** with **List II**:

List I	List II
Parameters	Instruments
A. Turbidity	I. Photometer
B. Flow rate (gas)	II. Stain gauge
C. Flow rate (liquid)	III. Rotameter
D. Agitator shaft power	IV. Magnetic inductive meters

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

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

Options :

71087021833. 1

71087021834. 2

71087021835. 3

71087021836. 4

Question Number : 120 Question Id : 7108705460 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Match **List I** with **List II**:

List I	List II
Method	Application utilities
A. Slip method	I. Blower
B. Traverse reading	II. Pump flow
C. Tracer method	III. Compressed air
D. Nozzle method	IV. Motor load

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

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

Options :

71087021837. 1

71087021838. 2

71087021839. 3

71087021840. 4