

# 41 Processing and Food Engineering ICAR SEPT 2022

Topic:- GEN KNOW COMMON PHD

1) Colour of the tag used on certified seed bags is[Question ID = 16958][Question Description = 101\_221\_GKD\_SEP22\_Q01]

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

2) Following are the statements regarding the Usar soil -

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

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

[Question ID = 16959][Question Description = 102\_221\_GKD\_SEP22\_Q02]

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

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

[Question ID = 16960][Question Description = 103\_221\_GKD\_SEP22\_Q03]

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

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

[Question ID = 16961][Question Description = 104\_221\_GKD\_SEP22\_Q04]

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

5) Mid-Oceanic Ridges are one of the important divisions of the ocean floor. In this respect, point out the incorrect statement regarding the 'Mid-Oceanic Ridges'. [Question ID = 16962][Question Description = 105\_221\_GKD\_SEP22\_Q05]

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

6) Consider the following facts about the union territory of India and point out the one which is incorrect in relation to union territory. [Question ID = 16963][Question Description = 106\_221\_GKD\_SEP22\_Q06]

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

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

**7) Variety of flora and fauna are found in the different types of forest in India. In this regard, species of trees like teak, *sal shisham*, *sandalwood*, etc. are found in which of the following type of forests in India?**[Question ID = 16964][Question Description = 107\_221\_GKD\_SEP22\_Q07]

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

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

**[Question ID = 16965][Question Description = 108\_221\_GKD\_SEP22\_Q08]**

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

**9) Point out the incorrect statements regarding the service sector in India.**[Question ID = 16966][Question Description = 109\_221\_GKD\_SEP22\_Q09]

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

**10) Consider the statements regarding the agriculture sector in India and point out the incorrect statement.**[Question ID = 16967][Question Description = 110\_221\_GKD\_SEP22\_Q10]

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

**11) In case of related goods, the cross elasticity of demand is**[Question ID = 16968][Question Description = 111\_221\_GKD\_SEP22\_Q11]

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

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

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

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

**[Question ID = 16969][Question Description = 112\_221\_GKD\_SEP22\_Q12]**

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

[Option ID = 37876]

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

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

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

[Question ID = 16970][Question Description = 113\_221\_GKD\_SEP22\_Q13]

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

14) Consumers are likely to get a variety of goods in which kind of market competition[Question ID = 16971][Question Description = 114\_221\_GKD\_SEP22\_Q14]

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

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

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

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

[Question ID = 16972][Question Description = 115\_221\_GKD\_SEP22\_Q15]

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

16) The scientific study of soil is[Question ID = 16973][Question Description = 116\_221\_GKD\_SEP22\_Q16]

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

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

[Question ID = 16974][Question Description = 117\_221\_GKD\_SEP22\_Q17]

- 1. Tetraploid

[Option ID = 37893]

- 2. Hexaploid

[Option ID = 37894]

- 3. Haploid

[Option ID = 37895]

- 4. Diploid

[Option ID = 37896]

18) Sectoral inflation refers to[Question ID = 16975][Question Description = 118\_221\_GKD\_SEP22\_Q18]

- 1. Running inflation [Option ID = 37897]

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

**19) Keynes Liquidity trap refers to[Question ID = 16976][Question Description = 119\_221\_GKD\_SEP22\_Q19]**

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

**20) A business is solvent if[Question ID = 16977][Question Description = 120\_221\_GKD\_SEP22\_Q20]**

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

Topic:- Agricultural Engg and Tech\_PHD

**1) The major objectives of secondary tillage operations are:**

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

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

**[Question ID = 4751][Question Description = 101\_63\_PBF\_SEP22\_Q01]**

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

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

**[Question ID = 4752][Question Description = 102\_63\_PBF\_SEP22\_Q02]**

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

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

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

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

**[Question ID = 4753][Question Description = 103\_63\_PBF\_SEP22\_Q03]**

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

**4) In order to reduce the speed of seed in furrows, the seed tube is inclined rear ward from the vertical at:[Question ID = 4754][Question Description = 104\_63\_PBF\_SEP22\_Q04]**

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

4. 45° - 60° [Option ID = 19016]

5) The outer tip of sweep wing has ground clearance of:[Question ID = 4755][Question Description = 105\_63\_PBF\_SEP22\_Q05]

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

6) Given below are two statements

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

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

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

[Question ID = 4756][Question Description = 106\_63\_PBF\_SEP22\_Q06]

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

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

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

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

[Question ID = 4757][Question Description = 107\_63\_PBF\_SEP22\_Q07]

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

8) Which is NOT a type of thresher?

[Question ID = 4758][Question Description = 108\_63\_PBF\_SEP22\_Q08]

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

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

[Question ID = 4759][Question Description = 109\_63\_PBF\_SEP22\_Q09]

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

10) Length of chain conveyor in elevator type potato digger is normally kept in the range of:[Question ID = 4760][Question Description = 110\_63\_PBF\_SEP22\_Q10]

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

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

[Question Description = 111\_63\_PBF\_SEP22\_Q11]

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

4. Neutral [Option ID = 19044]

12) Given below are two statements

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

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

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

[Question ID = 4762][Question Description = 112\_63\_PBF\_SEP22\_Q12]

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

13) Which type of mouldboard is preferred for more sticky soils, where it is difficult for other mouldboard to scour well?[Question ID = 4763][Question Description = 113\_63\_PBF\_SEP22\_Q13]

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

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

[Question ID = 4764][Question Description = 114\_63\_PBF\_SEP22\_Q14]

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

15) Calculate the oxygen consumption for the agricultural worker in litres per minute, if he expires 180 litres of air having 16% of oxygen in 6 minutes duration.[Question ID = 4765][Question Description = 115\_63\_PBF\_SEP22\_Q15]

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

16) In which gasifier the products from the pyrolysis zone and drying zone pass through oxidation zone causing thermal cracking of volatiles.[Question ID = 4766][Question Description = 116\_63\_PBF\_SEP22\_Q16]

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

17) In offset disc harrow as compared to rear gang the couple acting on front gang is:[Question ID = 4767][Question Description = 117\_63\_PBF\_SEP22\_Q17]

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

18) The efficiency of diesel engine with high compression and early fuel cut-off is:[Question ID = 4768][Question Description = 118\_63\_PBF\_SEP22\_Q18]

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

19) Front loading is provided on tractors for:[Question ID = 4769][Question Description = 119\_63\_PBF\_SEP22\_Q19]

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

20) Which type of joint represents the shoulder joints and hip joints?[Question ID = 4770][Question Description = 120\_63\_PBF\_SEP22\_Q20]

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

21) The pupose of batter slope in bench terrace is

[Question ID = 4771][Question Description = 121\_63\_PBF\_SEP22\_Q21]

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

22) Match List I with List II

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

Choose the correct answer from the options given below:

[Question ID = 4772][Question Description = 122\_63\_PBF\_SEP22\_Q22]

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

23) Given below are two statements

Statement I: Hydraulic jump is a local phenomenon.

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

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

[Question ID = 4773][Question Description = 123\_63\_PBF\_SEP22\_Q23]

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

24) Which sequence of water erosion is classified ?

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

Choose the *correct* answer from the options given below

[Question ID = 4774][Question Description = 124\_63\_PBF\_SEP22\_Q24]

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

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

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

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

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

[Question ID = 4775][Question Description = 125\_63\_PBF\_SEP22\_Q25]

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

26) Match List I with List II

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

Choose the correct answer from the options given below:

[Question ID = 4776][Question Description = 126\_63\_PBF\_SEP22\_Q26]

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

27) Given below are two statements

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

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

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

[Question ID = 4777][Question Description = 127\_63\_PBF\_SEP22\_Q27]

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

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

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

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

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

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

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

[Question ID = 4778][Question Description = 128\_63\_PBF\_SEP22\_Q28]

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

29) Maximum water development can only be attained by combined use of surface and groundwater is known as[Question ID = 4779][Question Description = 129\_63\_PBF\_SEP22\_Q29]

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

30) Contour trenching is NOT suitable on the slopes

[Question ID = 4780][Question Description = 130\_63\_PBF\_SEP22\_Q30]



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

31) Given below are two statements

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

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

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

[Question ID = 4781][Question Description = 131\_63\_PBF\_SEP22\_Q31]

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

32) Match List I with List II

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

Choose the correct answer from the options given below:

[Question ID = 4782][Question Description = 132\_63\_PBF\_SEP22\_Q32]

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

33) Given below are two statements

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

Statement II: Grassed waterway is laid across the slope.

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

[Question ID = 4783][Question Description = 133\_63\_PBF\_SEP22\_Q33]

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

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

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

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

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

[Question ID = 4784][Question Description = 134\_63\_PBF\_SEP22\_Q34]

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

35) A hydrograph is a plot of [Question ID = 4785][Question Description = 135\_63\_PBF\_SEP22\_Q35]

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

36) A Cipolletti weir is a trapezoidal weir having side slope of [Question ID = 4786][Question Description = 136\_63\_PBF\_SEP22\_Q36]

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

**37) The tube wells are compared with respect to their[Question ID = 4787][Question Description = 137\_63\_PBF\_SEP22\_Q37]**

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

**38) Given below are two statements**

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

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

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

**[Question ID = 4788][Question Description = 138\_63\_PBF\_SEP22\_Q38]**

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

**39) Given below are two statements**

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

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

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

**[Question ID = 4789][Question Description = 139\_63\_PBF\_SEP22\_Q39]**

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

**40) Given below are two statements**

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

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

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

**[Question ID = 4790][Question Description = 140\_63\_PBF\_SEP22\_Q40]**

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

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

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

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

**[Question ID = 4791][Question Description = 141\_63\_PBF\_SEP22\_Q41]**

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

42) Match List I with List II

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

Choose the correct answer from the options given below:

[Question ID = 4792][Question Description = 142\_63\_PBF\_SEP22\_Q42]

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

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

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

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

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

[Question ID = 4793][Question Description = 143\_63\_PBF\_SEP22\_Q43]

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

44) Cover and plinth is a method of [Question ID = 4794][Question Description = 144\_63\_PBF\_SEP22\_Q44]

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

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

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

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

[Question ID = 4795][Question Description = 145\_63\_PBF\_SEP22\_Q45]

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

46) Energy requirement equation for size reduction is given by

[Question ID = 4796][Question Description = 146\_63\_PBF\_SEP22\_Q46]

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

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

[Question ID = 4797][Question Description = 147\_63\_PBF\_SEP22\_Q47]

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

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

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

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

[Question ID = 4798][Question Description = 148\_63\_PBF\_SEP22\_Q48]

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

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

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

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

[Question ID = 4799][Question Description = 149\_63\_PBF\_SEP22\_Q49]

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

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

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

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

[Question ID = 4800][Question Description = 150\_63\_PBF\_SEP22\_Q50]

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

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1) Match List I with List II

List I	List II
A. Drag coefficient	I. Rupture point
B. Hedonic scale	II. Terminal velocity
C. Contact stress	III. Hertz theory
D. Ultimate strength	IV. Sensory test
	V. Rheology

Choose the correct answer from the options given below:

[Question ID = 4901][Question Description = 101\_66\_APF\_SEP22\_Q01]

1. A - III, B - II, C - I, D - V [Option ID = 19601]
2. A - V, B - I, C - II, D - III [Option ID = 19602]
3. A - II, B - IV, C - V, D - I [Option ID = 19603]
4. A - II, B - IV, C - III, D - I [Option ID = 19604]

2) Given below are some statements.

- A. The 4-element model in rheology is also known as Burger model.
- B. The thixotropic fluid shows a decrease in shear stress with time of shear at a given shear rate.
- C. The ratio of transverse strain to the corresponding axial strain resulting from uniformly distributed axial stress below the proportionality limit of the material is known as proportionality limit.
- D. The air flow planimeter can be used for determining the leaf and stalk surface area.
- E. A pyrometer is used to measure pressure.

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

[Question ID = 4902][Question Description = 102\_66\_APF\_SEP22\_Q02]

- 1. A, B and D only  
[Option ID = 19605]
- 2. B, C and D only  
[Option ID = 19606]
- 3. A and D only  
[Option ID = 19607]
- 4. A, B and E only  
[Option ID = 19608]

3) Given below are two statements

Statement I: Hookean body represents both ideal plastic behaviour.

Statement II: The St. Venant body represents ideal visco-elastic behaviour.

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

[Question ID = 4903][Question Description = 103\_66\_APF\_SEP22\_Q03]

- 1. Both Statement I and Statement II are true [Option ID = 19609]
- 2. Both Statement I and Statement II are false [Option ID = 19610]
- 3. Statement I is true but Statement II is false [Option ID = 19611]
- 4. Statement I is false but Statement II is true [Option ID = 19612]

4) Given below are two statements

Statement I: For settling of dust in air, the drag force and buoyancy force act in the same direction.

Statement II: The drag force will increase as the square of the drag coefficient.

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

[Question ID = 4904][Question Description = 104\_66\_APF\_SEP22\_Q04]

- 1. Both Statement I and Statement II are true [Option ID = 19613]
- 2. Both Statement I and Statement II are false [Option ID = 19614]
- 3. Statement I is true but Statement II is false [Option ID = 19615]
- 4. Statement I is false but Statement II is true [Option ID = 19616]

5) Read the statements below.

A. Poisson's ratio is the absolute value of the ratio of transverse strain to the corresponding axial strain resulting from uniformly distributed axial stress below the proportional limit of the material.

B. Proportionality limit is the least stress, which a material is capable of sustaining without any deviation from proportionality of stress to strain.

C. The Poisson ratio can have more than one values for a material.

D. Rigidity is the ratio of shear stress and the elastic shearing strain.

E. Yield point is the strain remaining after complete release of the load producing the deformation.

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

[Question ID = 4905][Question Description = 105\_66\_APF\_SEP22\_Q05]

- 1. A and D only [Option ID = 19617]
- 2. C and D only [Option ID = 19618]
- 3. A, C and D only [Option ID = 19619]

4. A and E only [Option ID = 19620]

6) Match List I with List II

List I	List II
A. Mechanical separation	I. Impellers
B. Heat processing	II. Bioreactor
C. Filtration	III. Septum
D. Mixing	IV. Retorting
	V. Expression

Choose the correct answer from the options given below:

[Question ID = 4906][Question Description = 106\_66\_APF\_SEP22\_Q06]

1. A -V , B -IV , C -III , D -II [Option ID = 19621]
2. A -V , B -III , C -IV , D -I [Option ID = 19622]
3. A -V , B -IV , C -III , D -I [Option ID = 19623]
4. A -II , B -III , C -I , D -V [Option ID = 19624]

7) Given below are two statements

Statement I: The Ball mill is a device in which the cylinder containing the balls is rotated.

Statement II: The ball mills reduce the size by shear.

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

[Question ID = 4907][Question Description = 107\_66\_APF\_SEP22\_Q07]

1. Both Statement I and Statement II are true [Option ID = 19625]
2. Both Statement I and Statement II are false [Option ID = 19626]
3. Statement I is true but Statement II is false [Option ID = 19627]
4. Statement I is false but Statement II is true [Option ID = 19628]

8) Given below are two statements

Statement I: The basket centrifuge gives a higher rate of separation of solids from suspensions than the settling tanks.

Statement II: The basket centrifuge can not be used for separation of liquid-liquid dispersions.

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

[Question ID = 4908][Question Description = 108\_66\_APF\_SEP22\_Q08]

1. Both Statement I and Statement II are true [Option ID = 19629]
2. Both Statement I and Statement II are false [Option ID = 19630]
3. Statement I is true but Statement II is false [Option ID = 19631]
4. Statement I is false but Statement II is true [Option ID = 19632]

9) Which of the following uses barometric leg?[Question ID = 4909][Question Description = 109\_66\_APF\_SEP22\_Q09]

1. Jacketed open kettle evaporator [Option ID = 19633]
2. Vacuum evaporator [Option ID = 19634]
3. Piezometer [Option ID = 19635]
4. Direct type heat exchanger [Option ID = 19636]

10) If the decimal reduction time for a bacteria is 3.4 minutes, the death rate constant (k) will be approximately equal to[Question ID = 4910][Question Description = 110\_66\_APF\_SEP22\_Q10]

1.  $0.294 \text{ min}^{-1}$  [Option ID = 19637]
2.  $0.68 \text{ min}^{-1}$  [Option ID = 19638]
3.  $7.83 \text{ min}^{-1}$  [Option ID = 19639]
4.  $13.2 \text{ min}^{-1}$  [Option ID = 19640]

11) Given below are some statements.

A. In an evaporator, boiling of the liquid is prevented in the heat exchanger tubes by maintaining the feed under back pressure.

B. The wiped and scraped surface evaporators have plate type heat exchangers.

C. The falling film evaporators are used for more viscous foods than climbing film evaporators.

D. The multiple effect evaporators can be used for only low viscous products.

E. The evaporation of food also helps in reducing water activity.

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

[Question ID = 4911][Question Description = 111\_66\_APF\_SEP22\_Q11]

1. A and D only [Option ID = 19641]
2. C and B only [Option ID = 19642]
3. A and C only [Option ID = 19643]
4. A, C and E only [Option ID = 19644]

12) If paddy having a bulk density of  $600 \text{ kg.m}^{-3}$  is conveyed in a belt conveyor having a speed of  $1 \text{ m.s}^{-1}$  and the cross section area of the load is  $40 \text{ cm}^2$ , what will be the capacity of the belt conveyor?

[Question ID = 4912][Question Description = 112\_66\_APF\_SEP22\_Q12]

1.  $144 \text{ kg.h}^{-1}$  [Option ID = 19645]
2.  $8640 \text{ kg.h}^{-1}$  [Option ID = 19646]
3.  $144 \text{ m}^3.\text{h}^{-1}$  [Option ID = 19647]
4.  $8640 \text{ m}^3.\text{h}^{-1}$  [Option ID = 19648]

13) In solvent extraction process, which of the following is commonly used to separate the oil from the miscella?

[Question ID = 4913][Question Description = 113\_66\_APF\_SEP22\_Q13]

1. Settling [Option ID = 19649]
2. Evaporation [Option ID = 19650]
3. Distillation and stripping under vacuum [Option ID = 19651]
4. Centrifugation [Option ID = 19652]

14) Given below are two statements

Statement I: During settling process, the Stokes' law region is when the Reynolds number is between 1000 to 2100.

Statement II: In the Stokes' law region the drag coefficient  $C_d$  is given as  $C_d = 24 \times \text{Reynold's number}$ .

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

[Question ID = 4914][Question Description = 114\_66\_APF\_SEP22\_Q14]

1. Both Statement I and Statement II are true [Option ID = 19653]
2. Both Statement I and Statement II are false [Option ID = 19654]
3. Statement I is true but Statement II is false [Option ID = 19655]
4. Statement I is false but Statement II is true [Option ID = 19656]

15) The work index is related to which of the following operation?

[Question ID = 4915][Question Description = 115\_66\_APF\_SEP22\_Q15]

1. Crystallisation [Option ID = 19657]
2. Size reduction [Option ID = 19658]
3. Mixing [Option ID = 19659]
4. Both size reduction and mixing [Option ID = 19660]

16) If the grain is stored in a huge metal bin during winter, then in which part of the bin, there will be moisture accumulation during summer due to moisture migration?[Question ID = 4916][Question Description = 116\_66\_APF\_SEP22\_Q16]

1. Lower portion [Option ID = 19661]
2. Upper portion [Option ID = 19662]
3. Near the wall of the bin [Option ID = 19663]
4. Near the centre, equi-distant from the top and lower layers [Option ID = 19664]

17) Which of the following statement is NOT true for shallow bin?

[Question ID = 4917][Question Description = 117\_66\_APF\_SEP22\_Q17]

1. The plane of rupture meets the upper layer of grain before it strikes the opposite side of bin wall.

[Option ID = 19665]

2. If the height of grain in the bin is  $h$  and the angle of rupture is  $\phi$ , then,  $h$  is less than  $L \tan (45 - \phi/2)$

[Option ID = 19666]

3. Depth of grain is less than four times the hydraulic radius.

[Option ID = 19667]

4.  $(H_d/D) < (0.75 k)$ , where  $\mu$  is the coefficient of friction and  $k$  is the ratio of lateral to vertical pressure.  $H_d$  is the depth of grain and  $D$  is diameter of circular bin.

[Option ID = 19668]

18) Given below are two statements

Statement I: As the temperature of grain rises from 15 to 45°C, the quality deterioration increases with increase in temperature.

Statement II: This is because of the increase in rate of respiration of the grain and the pests in it as well as the increased enzyme activity.

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

[Question ID = 4918][Question Description = 118\_66\_APF\_SEP22\_Q18]

1. Both Statement I and Statement II are true [Option ID = 19669]
2. Both Statement I and Statement II are false [Option ID = 19670]
3. Statement I is true but Statement II is false [Option ID = 19671]
4. Statement I is false but Statement II is true [Option ID = 19672]

19) Given below are two statements

Statement I: Methyl bromide is a colourless pungent gas used for grain disinfestation.

Statement II: Methyl bromide application for grain fumigation has now been banned in many countries.

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

[Question ID = 4919][Question Description = 119\_66\_APF\_SEP22\_Q19]

1. Both Statement I and Statement II are true [Option ID = 19673]
2. Both Statement I and Statement II are false [Option ID = 19674]
3. Statement I is true but Statement II is false [Option ID = 19675]
4. Statement I is false but Statement II is true [Option ID = 19676]

20) In the Pusa bin, what is the thickness of PE sheet used to prevent moisture entry into the grain? [Question ID = 4920]

[Question Description = 120\_66\_APF\_SEP22\_Q20]

1. 25 gauge [Option ID = 19677]
2. 250 gauge [Option ID = 19678]
3. 480 gauge [Option ID = 19679]
4. 700 gauge [Option ID = 19680]

21) Which of the following statements are correct?

- A. A tachometer is used for measurement of torque
- B. The main point of difference between human and machine intelligence is that human perceive everything as a pattern while machine perceive it merely as data.
- C. Fuzzy Logic can be implemented in only softwares, but not in hardwares
- D. Encoder is a digital transducer.
- E. Potentiometer is used for the measurement of both linear and angular displacement.

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

[Question ID = 4921][Question Description = 121\_66\_APF\_SEP22\_Q21]

1. A, B and D only [Option ID = 19681]
2. B, D and E only [Option ID = 19682]
3. B, C and E only [Option ID = 19683]
4. A, C and E only [Option ID = 19684]

22) Choose the correct statements.

- A. The active transducers are also known as self generating transducer.
- B. Thermistors have high and positive temperature coefficient of resistance.
- C. The sensing of thermocouple is based on the principle of variation of resistance of the couple with temperature.
- D. Bellows are well suited for dynamic measurement.
- E. Digital multimeter is basically a digital ammeter.

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

[Question ID = 4922][Question Description = 122\_66\_APF\_SEP22\_Q22]

1. A, B and D only



[Option ID = 19685]

2. A and B only

[Option ID = 19686]

3. B and D only

[Option ID = 19687]

4. A, B and E only

[Option ID = 19688]

23) In a 3-phase power measurement by two wattmeter method, the reading on one of the wattmeter is zero. What will be the power factor of the load?[Question ID = 4923][Question Description = 123\_66\_APF\_SEP22\_Q23]

1. Unity [Option ID = 19689]

2. 0.5 [Option ID = 19690]

3. 0.33 [Option ID = 19691]

4. Zero [Option ID = 19692]

24) Given below are two statements

Statement I: The piezometer is used to measure the static pressure head of a liquid flowing at any section of a pipe.

Statement II: The piezometer cannot work for negative gauge pressure since air would flow into the container through the tube.

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

[Question ID = 4924][Question Description = 124\_66\_APF\_SEP22\_Q24]

1. Both Statement I and Statement II are true [Option ID = 19693]

2. Both Statement I and Statement II are false [Option ID = 19694]

3. Statement I is true but Statement II is false [Option ID = 19695]

4. Statement I is false but Statement II is true [Option ID = 19696]

25) The capacitance between two plates increases with[Question ID = 4925][Question Description = 125\_66\_APF\_SEP22\_Q25]

1. Shorter plate area and higher applied voltage [Option ID = 19697]

2. Shorter plate area and shorter distance between them [Option ID = 19698]

3. Larger plate area, longer distance between plates and higher applied voltage [Option ID = 19699]

4. Larger plate area and shorter distance between plates [Option ID = 19700]

26) Using the principle of homogeneity of dimensions, choose which of the following is correct?

[Question ID = 4926][Question Description = 126\_66\_APF\_SEP22\_Q26]

1.  $T^2 = \frac{4\pi^2 r^3}{G}$

[Option ID = 19701]

2.  $T = \frac{\sqrt{4\pi^2 r^3}}{G}$

[Option ID = 19702]

3.  $T^2 = \frac{4\pi^2 r^3}{GM}$

[Option ID = 19703]

4.  $T = \sqrt{\frac{4\pi^2 r^3}{G}}$

[Option ID = 19704]

27) Statement I: Froude number is the rate of heat conducted to the rate of heat stored at that time

Statement II: Biot number is the ratio of the internal resistance of a body to heat conduction to its external resistance to heat convection

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

[Question ID = 4927][Question Description = 127\_66\_APF\_SEP22\_Q27]

1. Both Statement I and Statement II are true [Option ID = 19705]

2. Both Statement I and Statement II are false [Option ID = 19706]

3. Statement I is true but Statement II is false [Option ID = 19707]

4. Statement I is false but Statement II is true [Option ID = 19708]

28) The coefficient of performance of a heat engine is

- A. Ratio of the heat utilized by a heat engine to the total heat units in the fuel
- B. Ratio of net heat output to total external work
- C. Ratio of net heat removed to work output
- D. Fraction of heat converted to work
- E. Ratio of refrigeration load to work done by the system

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

[Question ID = 4928][Question Description = 128\_66\_APF\_SEP22\_Q28]

- 1. A, B and C only [Option ID = 19709]
- 2. A, B and D only [Option ID = 19710]
- 3. A, B and E only [Option ID = 19711]
- 4. A, B, C and D only [Option ID = 19712]

29) Given below are two statements:

Statement I: Langmuir and BET equations are used to model moisture sorption behaviour in food.

Statement II: BET isotherm describes monolayer molecular adsorption.

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

[Question ID = 4929][Question Description = 129\_66\_APF\_SEP22\_Q29]

- 1. Both Statement I and Statement II are True  
[Option ID = 19713]
- 2. Both Statement I and Statement II are false  
[Option ID = 19714]
- 3. Statement I is True, Statement II is false  
[Option ID = 19715]
- 4. Statement I is false, Statement II is true  
[Option ID = 19716]

30) Bernoulli's equation can be applied to compressible flow when the mach number is

[Question ID = 4930][Question Description = 130\_66\_APF\_SEP22\_Q30]

- 1. Between 0.1-0.5  
[Option ID = 19717]
- 2. Equal to 1  
[Option ID = 19718]
- 3. Very high  
[Option ID = 19719]
- 4. Between 0.6 - 0.9  
[Option ID = 19720]

31) Given below are two statements

Statement I: Engleberg huller works on the principle of friction.

Statement II: A mixture of bran, fines, husk of paddy, and milled rice are received at the discharge end of the huller.

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

[Question ID = 4931][Question Description = 131\_66\_APF\_SEP22\_Q31]

- 1. Both Statement I and Statement II are correct  
[Option ID = 19721]
- 2. Both Statement I and Statement II are incorrect  
[Option ID = 19722]
- 3. Statement I is correct but Statement II is incorrect  
[Option ID = 19723]
- 4. Statement I is incorrect but Statement II is correct  
[Option ID = 19724]

32) Which of the following statement(s) is/are false?

- A. In the CFTRI method of paddy parboiling, the paddy is soaked at 80-85 °C for 1-2 h.
- B. Plan sifters are used for the whole wheat flour making process.
- C. Deterioration in parboiled rice bran is faster than in raw rice bran.
- D. Winterization is used to remove gums from crude oil.
- E. Red earth is used in pulse wet milling.

[Question ID = 4932][Question Description = 132\_66\_APF\_SEP22\_Q32]

1. A, D and E only

[Option ID = 19725]

2. B, D and E only

[Option ID = 19726]

3. B, C and D only

[Option ID = 19727]

4. A, B and C only

[Option ID = 19728]

33) Match List I with List II

List I	List II
Product/ Characteristics	Process
A. Coffee flavour	I. Oxidation
B. Tea colour	II. Curing
C. Pickle	III. Roasting
D. Smoked Fish	IV. Fermentation

Choose the correct answer from the options given below:

[Question ID = 4933][Question Description = 133\_66\_APF\_SEP22\_Q33]

1. A-II, B-III, C-IV, D-I [Option ID = 19729]

2. A-III, B-I, C-IV, D-II [Option ID = 19730]

3. A-IV, B-I, C-II, D-III [Option ID = 19731]

4. A-I, B-III, C-IV, D-II [Option ID = 19732]

34) Match List I with List II

List I	List II
Process	Mechanism
A. Ohmic heating	I. Cavitation
B. Microwave heating	II. Microencapsulation
C. Ultrasonication	III. Electroporation
D. Supercritical fluids	IV. Dielectric heating
	V. Nanoencapsulation

Choose the correct answer from the options given below:

[Question ID = 4934][Question Description = 134\_66\_APF\_SEP22\_Q34]

1. A -V, B -III, C -II, D -I [Option ID = 19733]

2. A -III, B -I, C -V, D -II [Option ID = 19734]

3. A -IV, B -I, C -II, D -III [Option ID = 19735]

4. A -III, B -IV, C -I, D -V [Option ID = 19736]

35) Gamma oryzanol is found in

- A. Wheat bran
- B. Rice bran
- C. Rye bran
- D. Saffron

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

[Question ID = 4935][Question Description = 135\_66\_APF\_SEP22\_Q35]

1. A, B and D only [Option ID = 19737]

2. A, B and C only [Option ID = 19738]
3. B only [Option ID = 19739]
4. A and B only [Option ID = 19740]

**36) In a screw conveyor**

[Question ID = 4936][Question Description = 136\_66\_APF\_SEP22\_Q36]

1. Flight length > shaft length  
[Option ID = 19741]
2. Flight length < shaft length  
[Option ID = 19742]
3. Flight length = shaft length  
[Option ID = 19743]
4. Flight length = shaft diameter  
[Option ID = 19744]

**37) Given below are two statements**

**Statement I:** The belt conveyors can be used for curved paths

**Statement II:** Slats are used when belt conveyors are to be used in an inclined position

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

[Question ID = 4937][Question Description = 137\_66\_APF\_SEP22\_Q37]

1. Both Statement I and Statement II are true [Option ID = 19745]
2. Both Statement I and Statement II are false [Option ID = 19746]
3. Statement I is true but Statement II is false [Option ID = 19747]
4. Statement I is false but Statement II is true [Option ID = 19748]

**38) Which of the following statements are correct?**

- A. Nylon is used in tetra pack
- B. Polyester is used for milk packaging
- C. BOPP is used as primary packaging for bread
- D. Polystyrene is used for ice-cream packaging
- E. Nitrogen flushing is used for juice packaging

Choose the *correct* answer from the options given below

[Question ID = 4938][Question Description = 138\_66\_APF\_SEP22\_Q38]

1. A and D only [Option ID = 19749]
2. A, C and E only [Option ID = 19750]
3. B, D and E only [Option ID = 19751]
4. B and D only [Option ID = 19752]

**39) Match List I with List II**

List I	List II
Active packaging functions	Chemical compounds
A. Oxygen Scavenger	I. Calcium hydroxide
B. Moisture absorber	II. Activated carbon
C. Carbon dioxide scavenger	III. Ferrus salts
D. Ethylene absorber	IV. Silica gel

Choose the correct answer from the options given below:

[Question ID = 4939][Question Description = 139\_66\_APF\_SEP22\_Q39]

1. A - II, B - III, C - IV, D - I [Option ID = 19753]
2. A - III, B - IV, C - I, D - II [Option ID = 19754]
3. A - IV, B - I, C - II, D - III [Option ID = 19755]
4. A - IV, B - II, C - I, D - III [Option ID = 19756]

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

**Assertion A:** Mechanical damage occurs during the transportation of horticultural crops.

Reason R: Field forklift system, trailer system, and gondola system are used for handling horticultural crops.

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

[Question ID = 4940][Question Description = 140\_66\_APF\_SEP22\_Q40]

1. Both A and R are correct and R is the correct explanation of A

[Option ID = 19757]

2. Both A and R are correct but R is NOT the correct explanation of A

[Option ID = 19758]

3. A is correct but R is not correct

[Option ID = 19759]

4. A is not correct but R is correct

[Option ID = 19760]

41) Which one of the following charts gives simultaneously information about the progress of work and machine loading?

[Question ID = 4941][Question Description = 141\_66\_APF\_SEP22\_Q41]

1. Process chart [Option ID = 19761]

2. Machine load chart [Option ID = 19762]

3. Man-machine chart [Option ID = 19763]

4. Gantt chart [Option ID = 19764]

42) Match List I with List II

List I	List II
Charts	Representation
A. Bar chart	I. Time management
B. Flow chart	II. Three-dimensional representation
C. Gantt chart	III. Proportions
D. Pie-chart	IV. Sequential process
	V. Categorical data

Choose the correct answer from the options given below:

[Question ID = 4942][Question Description = 142\_66\_APF\_SEP22\_Q42]

1. A - II, B - IV, C - V, D - I [Option ID = 19765]

2. A - V, B - IV, C - I, D - III [Option ID = 19766]

3. A - III, B - I, C - II, D - V [Option ID = 19767]

4. A - IV, B - III, C - II, D - I [Option ID = 19768]

43) The BOD level in safe drinking water should be [Question ID = 4943][Question Description = 143\_66\_APF\_SEP22\_Q43]

1. 0 [Option ID = 19769]

2. 1-2 mg/L [Option ID = 19770]

3. 2-5 mg/L [Option ID = 19771]

4. 5-8 mg/L [Option ID = 19772]

44) Which of the following statement is incorrect with respect to the principles of plant layout?

[Question ID = 4944][Question Description = 144\_66\_APF\_SEP22\_Q44]

1. Equipment should be laid to give minimum economy of pipe work and supporting steel [Option ID = 19773]

2. Sufficient clear space should be provided between critical and mechanically dangerous or high temperature equipment to allow safety of operating or maintenance personnel's [Option ID = 19774]

3. Equipment needing frequent internal cleaning or replacement of internal parts should be laid out for ease of maintenance [Option ID = 19775]

4. High elevation should only be considered when ground space is limited or where gravity flow of materials is desired [Option ID = 19776]

45) In a food process plant

A. The finished product storage should be near the effluent treatment plant

B. The grain storage bins should be fumigated

C. Bactericides should be used when live steam is in contact with the product

D. A drain must be provided per 100 m<sup>2</sup> of wet processing area

E. Surge vessels should be provided for processed material between different operations

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

[Question ID = 4945][Question Description = 145\_66\_APF\_SEP22\_Q45]

1. A, B and D only [Option ID = 19777]
2. B, C and D only [Option ID = 19778]
3. C, D and E only [Option ID = 19779]
4. B, C and E only [Option ID = 19780]

**46) The BIS code of practice for food grain storage structure is [Question ID = 4946][Question Description = 146\_66\_APF\_SEP22\_Q46]**

1. IS 16020:2020 [Option ID = 19781]
2. IS 15000 [Option ID = 19782]
3. IS 609-1955 [Option ID = 19783]
4. IS 609-1965 [Option ID = 19784]

**47) The 5th principle of HACCP is**

**[Question ID = 4947][Question Description = 147\_66\_APF\_SEP22\_Q47]**

1. Conducting hazard analysis [Option ID = 19785]
2. Establishing corrective actions [Option ID = 19786]
3. Establishing critical limits [Option ID = 19787]
4. Establishing verification procedures [Option ID = 19788]

**48) A PERT network has 9 critical paths. The standard deviation in each activity path is 2. Then the standard deviation of the critical path is?**

**[Question ID = 4948][Question Description = 148\_66\_APF\_SEP22\_Q48]**

1. 2  
[Option ID = 19789]
2. 4  
[Option ID = 19790]
3. 6  
[Option ID = 19791]
4. 9  
[Option ID = 19792]

**49) Match List I with List II**

List I	List II
Standards	Linked products
A. AGMARK	I. Drinking water
B. ISI	II. Processed fruit products
C. Hallmark	III. Electrical equipment
D. FPO	IV. Precious metals
	V. Agricultural commodities

Choose the correct answer from the options given below:

**[Question ID = 4949][Question Description = 149\_66\_APF\_SEP22\_Q49]**

1. A - IV, B - I, C - II, D - V [Option ID = 19793]
2. A - II, B - V, C - I, D - III [Option ID = 19794]
3. A - III, B - IV, C - V, D - I [Option ID = 19795]
4. A - V, B - III, C - IV, D - II [Option ID = 19796]

**50) In a system of inequalities for a linear programming model, to equalize an inequality such as  $2x_1 + x_2 + 3x_3 \leq 18$**

**[Question ID = 4950][Question Description = 150\_66\_APF\_SEP22\_Q50]**

1. Multiply each variable by -1 [Option ID = 19797]
2. Invert the inequality [Option ID = 19798]
3. Add a slack variable [Option ID = 19799]
4. Add an artificial variable [Option ID = 19800]