SRM VALLIAMMAI ENGINEERING COLLEGE
(An Autonomous Institution)

SRM Nagar, Kattankulathur – 603 203

DEPARTMENT OF AGRICULTURE ENGINEERING

QUESTION BANK

V SEMESTER

1902503 POST HARVEST TECHNOLOGY
Regulation – 2019
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Prepared by

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SUBJECT: POST HARVEST TECHNOLOGY

SEM / YEAR : 05 /III

UNIT-I: FUNDAMENTALS OF POST – HARVESTING 9

Post-harvest technology – introduction –objectives –post harvest losses of cereals,pulses and oilseeds – importance - optimum stage of harvest. Threshing – traditional methods- mechanical threshers – types-principles and operation-moisture content –measurement –direct and indirect methods – moisture meters – equilibrium moisture content.

PART - A

Q.NO	QUESTIONS	BT LEVEL	COMPETENCE
1.	Define post-harvest technology.	BT-1	Remembering
2.	What are the objectives of post-harvest technology?	BT-2	Understanding
3.	Write the important factors to be considered during storage.	BT-1	Remembering
4.	What losses will occur while transporting farm produce?	BT-2	Understanding
5.	Draw flowchart for PHT process.	BT-1	Remembering
6.	Why is PHT an interdisciplinary subject?	BT-4	Analysing
7.	What are objectives of post harvest technology	BT-2	Understanding
8.	List out the role of PHT in agriculture.	BT-1	Remembering
9.	Write the common name for 2 crops in each cereals, pulses and oilseeds.	BT-4	Analysing
10.	What are the stages of post harvest loss?	BT-3	Applying
11.	Write any 5 roles of PH technologists.	BT-1	Remembering
12.	List the changes will occur during storage.	BT-3	Applying
13.	Write about the storage pest in rice, pulses	BT-2	Understanding
14.	Expand the following institutions with its location NIFTEM, CIPHET, CIAE, IGMRI	BT-1	Remembering
15.	What is physiological maturity?	BT-4	Analysing
16.	What is threshing?	BT-5	Evaluating
17.	Write the difference between harvesting maturity and physiological maturity	BT-2	Understanding
18.	How are threshers classified and what are the types?	BT-4	Analysing
19.	Write the components of the power thresher.	BT-2	Understanding
20.	Define moisture content.	BT-4	Analysing
21.	How is MC determined?	BT-3	Applying
22.	Draw a neat sketch of a rasp bar cylinder.	BT-6	Creating

23.	What is threshing efficiency and write down its formula	BT-3	Applying
24.	What is the post harvest loss?	BT-1	Remembering
25.	Why there is no uniform maturity in pulses?	BT-2	Understanding

PART – B

Q.NO	QUESTIONS	BT LEVEL	COMPETENCE
1.	Describe the PHT process with a flow chart.	BT-2	Understanding
2.	Discuss about olpad thresher.	BT-4	Analysing
3.	Discuss MC measurement by oven method.	BT-5	Evaluating
4.	Discuss about moisture meter function.	BT-3	Applying
5.	Brief about pedal operated thresher.	BT-5	Evaluating
6.	Explain the importance of optimum stage of harvest	BT-6	Creating
7.	Brief about the hygrometer.	BT-1	Remembering
8.	Write in detail about the crop duration, stages of harvest and post harvest losses of following crops *viz.*, rice, maize, wheat, groundnut	BT-5	Evaluating
9.	What is the principle of mechanical thresher	BT-5	Evaluating
10.	Brief about Brown distillation method with neat sketch.	BT-4	Analysing
11.	Discuss about various threshing losses.	BT-4	Analysing
12.	Discuss infrared methods.	BT-2	Understanding
13.	Write short notes on threshers.	BT-3	Applying
14.	Write down the criteria for harvesting rice, sorghum, redgram, soyabean, groundnut, sesame.	BT-2	Understanding
15.	Brief about types of drying in cereals.	BT-1	Remembering
16.	Write in detail about the crop duration, stages of harvest and post harvest losses of following crops *viz.*, sesame, redgram, blackgram, soyabean	BT-5	Evaluating
17.	Write down the precautions in operation of threshers	BT-3	Applying

PART-C

Q.NO	QUESTIONS	BT LEVEL	COMPETENCE
1.	Detail about power operated thresher component,principle and procedure.	BT-1	Remembering
2.	Discuss the primary PH losses in different groups of agricultural produce.	BT-2	Understanding
3.	Discuss direct methods of determining MC with procedure.	BT-4	Analysing
4.	Detail about different moisture meters working principle.	BT-3	Applying
5.	How the post harvest losses in crops can be managed?	BT-5	Evaluating

UNIT-II: PSYCHROMETRY AND DRYING

Psychrometry – importance – Psychrometric charts and its uses – Drying – principles and Theory of drying – thin layer and deep bed drying – Hot air drying – methods of producing hot air – Types of grain dryers – selection – construction, operation and maintenance of dryers – Design of dryers.

PART - A

Q.NO	QUESTIONS	BT LEVEL	COMPETENCE
1.	What is psychrometry?	BT-1	Remembering
2.	List the properties of psychrometry.	BT-4	Analysing
3.	Define dew point temperature.	BT-1	Remembering
4.	What is relative humidity?	BT-1	Remembering
5.	Define dry-bulb temperature.	BT-4	Analysing
6.	Write a formula for humidity ratio.	BT-5	Evaluating
7.	Classify drying rate period.	BT-2	Understanding
8.	How can we control the drying rate period?	BT-3	Applying
9.	List out the types of dryers.	BT-3	Applying
10.	Define psychrometric ratio.	BT-3	Applying
11.	How is the psychrometric process taking place?	BT-2	Understanding
12.	What is humidifying?	BT-1	Remembering
13.	List out the application of psychrometric charts.	BT-1	Remembering
14.	Draw a psychrometric chart.	BT-4	Analysing
15.	Define adiabatic saturation.	BT-2	Understanding
16.	What are the types of psychrometric instruments?	BT-2	Understanding
17.	Categorize drying processes.	BT-1	Remembering
18.	Write down the application of drying.	BT-4	Analysing
19.	What are the principles of drying?	BT-2	Understanding
20.	List out the factors causing successful drying.	BT-4	Analysing
21	What are the disadvantages of open sun drying?	BT-1	Remembering
22	Write the parts of solar dryers.	BT-4	Analysing
23	Define wet-bulb temperature.	BT-6	Creating
24	What are the types of fluidized bed dryers?	BT-1	Remembering
25	Define theory of drying.	BT-1	Remembering

PART – B

Q.NO	QUESTIONS	BT LEVEL	COMPETENCE
1.	Discuss about any five pshychrometric properties of air.	BT-1	Remembering
2.	Brief about principles and theory of drying.	BT-5	Evaluating
3.	Discuss Psychrometric chart and its uses.	BT-4	Analysing
4.	Explain thin layer drying with a neat sketch.	BT-4	Analysing
5.	Brief about the methods of producing hot air.	BT-4	Analysing
6.	Brief about any three psychrometric processes.	BT-3	Applying
7.	Discuss about LSU dryer with a neat sketch.	BT-6	Creating

8.	Brief fluidized bed dryer with merits and demerits.	BT-5	Evaluating
9.	Differentiate pneumatic and rotary dryers.	BT-2	Understanding
10.	Explain the mechanism of the drying process.	BT-5	Evaluating
11.	Differentiate deep bed drying and thin layer drying.	BT-2	Understanding
12.	Brief about continuous flow dryer with neat sketch.	BT-2	Understanding
13.	Discuss the merits and demerits of sun drying.	BT-3	Applying
14.	Brief about freeze dryer with neat sketch.	BT-1	Remembering
15.	What are the points to be remembered while operating dryers	BT-5	Evaluating
16.	Brief note on the selection of dryers	BT-2	Understanding
17.	List out the dryers and how are they maintained?	BT-2	Understanding

PART-C

Q.NO	QUESTIONS	BT LEVEL	COMPETENCE
1.	Detail about the psychrometric chart and its application.	BT-4	Analysing
2.	Explain about the psychrometric properties of grains.	BT-2	Understanding
3.	Detail any five types of mechanical dryer.	BT-1	Remembering
4.	Detail LSU dryer with its components, advantages and disadvantages.	BT-5	Evaluating
5.	Explain the design of dryers	BT-3	Applying

UNIT–III: CLEANING AND GRADING

Principles - air screen cleaners – adjustments - cylinder separator - spiral separator – magnetic separator - colour sorter - inclined belt separator – length separators - effectiveness of separation and performance index.

PART - A

Q.NO	QUESTIONS	BT LEVEL	COMPETENCE
1.	Explain cleaning and grading of grains.	BT-2	Understanding
2.	List out the factors influencing the effectiveness of hand grading.	BT-1	Remembering
3.	What are the factors influencing cleaning and sorting of grains?	BT-2	Understanding
4.	Illustrate objectives of cleaning.	BT-1	Remembering
5.	Describe about screening.	BT-4	Analysing
6.	Write down the types of air screen cleaner.	BT-4	Analysing
7.	Demonstrate the factors influencing design of air screen cleaner.	BT-2	Understanding
8.	How will you adjust the air screen cleaner?	BT-2	Understanding
9.	List out the types of grain separators.	BT-4	Analysing
10.	What are the factors affecting the screening efficiency?	BT-1	Remembering
11.	Illustrate the possibility of particle facing screen aperture?	BT-5	Evaluating
12.	Compare cylinder and spiral separator.	BT-2	Understanding
13.	How will you evaluate the magnetic separator?	BT-4	Analysing

14.	Explain the working principle of colour sorter.	BT-1	Remembering
15.	Draw the components of the length separator.	BT-1	Remembering
16.	Explain the uses of spiral separators.	BT-1	Remembering
17.	Demonstrate the property followed by any three types of separator.	BT-3	Applying
18.	Give examples of grains which are processed by colour sorter.	BT-2	Understanding
19.	List out the different parts of the air screen cleaner.	BT-1	Remembering
20.	Draw the components of the cylinder separator and label the parts.	BT-4	Analysing
21	Evaluate the function of a specific gravity separator.	BT-4	Analysing
22	Define performance index.	BT-1	Remembering
23	In inclined draper, how are the materials sorted?	BT-3	Applying
24	How will you assess the effectiveness of separation?	BT-3	Applying
25	Why is water sprayed on the screw conveyor of the magnetic separator?	BT-2	Understanding

PART – B

Q.NO	QUESTIONS	BT LEVEL	COMPETENCE
1.	Describe the principles of cleaning and grading.	BT-2	Understanding
2.	Write short notes on the air screen cleaner.	BT-5	Evaluating
3.	Explain colour sorter.	BT-4	Analysing
4.	Demonstrate cylinder separator with neat sketch.	BT-6	Creating
5.	Brief about effectiveness of screen.	BT-3	Applying
6.	Discuss the uses of various types of separator.	BT-4	Analysing
7.	Criticize the different types of separators based on its working principle.	BT-6	Creating
8.	Explain about magnetic separators with a neat sketch.	BT-5	Evaluating
9.	Detail about length separator with its working principle.	BT-4	Analysing
10.	Illustrate functions of spiral separators.	BT-4	Analysing
11.	Brief about performance index of separators.	BT-2	Understanding
12.	Differentiate magnetic and spiral separator.	BT-4	Analysing
13.	Detail about theory of separation and influencing factors.	BT-3	Applying
14.	Criticize the working principle of inclined draper and length separator.	BT-2	Understanding
15.	Write down the difference between air screen cleaners and separators	BT-4	Analysing
16.	Classify graders based on the grading principles	BT-6	Creating
17.	Discuss the properties of various types of separator.	BT-4	Analysing

PART-C

Q.NO	QUESTIONS	BT LEVEL	COMPETENCE
1.	Elaborate about air screen cleaner working principle, components with neat sketch.	BT-2	Understanding
2.	Discuss about the specific gravity separator.	BT-4	Analysing
3.	Differentiate cylinder and length separator.	BT-3	Applying
4.	Demonstrate the separator with a neat sketch which is applicable to process paddy grains.	BT-6	Creating
5.	Explain about the performance index	BT-3	Applying

UNIT–IV: SHELLING AND HANDLING

Principles and operation – maize sheller, husker sheller for maize – groundnut decorticator – castor sheller – material handling – belt conveyor –screw conveyor – chain conveyor – bucket elevators – pneumatic conveying.

PART – A

Q.NO	QUESTIONS	BT LEVEL	COMPETENCE
1	List out the components of the sheller.	BT-1	Remembering
2	What is shelling?	BT-1	Remembering
3	Which principle is suitable for maize sheller?	BT-2	Understanding
4	What are the types of maize sheller?	BT-4	Analysing
5	Explain the working principle of groundnut decorticator?	BT-4	Analysing
6	Illustrate the components of the castor sheller.	BT-1	Remembering
7	Differentiate shelling and decortications.	BT-4	Analysing
8	Why do we need material handling?	BT-2	Understanding
9	Criticize the purpose of the conveyor.	BT-2	Understanding
10	Explain the factors influencing material handling.	BT-2	Understanding
11	Discuss the adjustments should be made in maize Sheller.	BT-4	Analysing
12	Write down the purpose of the conveyor.	BT-1	Remembering
13	List out the various types of conveyor used in agriculture material handling.	BT-3	Applying
14	Criticize the factors involved in selection of conveyors.	BT-4	Analysing
15	Define pneumatic conveying.	BT-2	Understanding
16	Draw a belt conveyor and label the parts.	BT-2	Understanding
17	List the various parts of the bucket elevator.	BT-4	Analysing
18	Explain screw conveyor working principle.	BT-5	Evaluating
19	Differentiate pneumatic and belt conveying.	BT-2	Understand
20	Why are conveyor systems used?	BT-1	Remembering
21	What are the benefits of using a conveyor?	BT-1	Remembering
22	List the factors influencing shelling efficiency.	BT-2	Understanding
23	How will you assess unshelled grain percentage?	BT-5	Evaluating
24	Define grain damage.	BT-1	Remembering
25	Demonstrate the components of groundnut decorticator.	BT-4	Analysing

PART B

Q.NO	QUESTIONS	BT LEVEL	COMPETENCE
1	Elaborate bucket elevator working principle with neat sketch.	BT-5	Evaluating
2	Describe a maize sheller.	BT-1	Remembering
3	Demonstrate groundnut decorticator operation.	BT-2	Understanding
4	Explain about the castor sheller with a neat sketch.	BT-2	Understanding
5	Differentiate belt conveyor and screw conveyor.	BT-4	Analysing
6	Brief about chain conveyor operation.	BT-1	Remembering
7	Write short notes on material handling.	BT-2	Understanding
8	Compare and distinguish maize and husker sheller.	BT-3	Applying
9	Detail about the pneumatic conveying operation.	BT-5	Evaluating
10	Brief about shelling and handling principles and operation.	BT-5	Evaluating
11	Describe the merits and demerits of shellers.	BT-4	Analysing
12	Illustrate the advantages of chain conveyors over screw conveyors.	BT-4	Analysing
13	How will you evaluate the performances of bucket elevator and screw conveyor?	BT-4	Analysing
14	Demonstrate husker sheller operation with a neat sketch and label the parts.	BT-1	Remembering
15	Differentiate chain conveyor and bucket elevator	BT-4	Analysing
16	Briefly explain the principles of pneumatic conveying	BT-5	Evaluating
17	Compare different types of shellers and how to calculate shelling efficieny.	BT-3	Applying

PART – C

Q.NO	QUESTIONS	BT LEVEL	COMPETENCE
1	Elaborate about different types of sheller and its operation.	BT-2	Understanding
2	Detail about groundnut decorticator working principle , components, merits and demerits.	BT-3	Applying
3	Compare the types of conveyors which are mainly used in Post harvesting Technology.	BT-5	Evaluating
4.	Describe screw conveyor and belt conveyor working principle, components with neat sketch.	BT-4	Analysing
5.	Describe chain conveyor and bucket elevator working principle, components with neat sketch.	BT-4	Analysing

UNIT–V: CROP PROCESSING

Paddy processing – parboiling of paddy – methods - merits and demerits - dehusking of paddy - methods – merits and demerits – rice polishers –types - constructional details – polishing - layout

of modern rice mill - wheat milling – pulse milling methods - oil seed processing – millets processing.

PART – A

Q.NO	QUESTIONS	BT LEVEL	COMPETENCE
1	What is paddy processing?	BT-1	Remembering
2	Demonstrate the merits of paddy processing.	BT-3	Applying
3	Define rice processing.	BT-2	Understanding
4	Why the post harvest processing is important in all crops?	BT-4	Analysing
5	Illustrate the factors that require paddy processing?	BT-6	Creating
6	In what way can you improve the processing of rice?	BT-6	Creating
7	What are the demerits of parboiling paddy?	BT-4	Analysing
8	How do you process paddy rice?	BT-2	Understanding
9	List out the constructional details required for polishers.	BT-4	Analysing
10	Give the specifications to get good quality paddy.	BT-4	Analysing
11	Define polishing.	BT-1	Remembering
12	What do you understand about dehusking paddy?	BT-2	Understanding
13	Compare the types of rice milling process.	BT-3	Applying
14	Write the steps involved in multistage milling of rice.	BT-1	Remembering
15	Differentiate parboiling and milling of paddy.	BT-2	Understanding
16	List the types of rice polishers.	BT-1	Remembering
17	Illustrate the different methods involved in dehusking paddy.	BT-1	Remembering
18	Compare wheat and paddy milling working principle.	BT-3	Applying
19	Criticize traditional and modern rice mills.	BT-3	Applying
20	Write down the different pulse milling methods.	BT-2	Understanding
21	Describe raw material preparation for oilseeds.	BT-2	Understanding
22	Explain about millet processing technology.	BT-1	Remembering
23	Demonstrate wheat milling functions.	BT-2	Understanding
24	What are the factors to be considered while milling rice?	BT-3	Applying
25	Write down the equipments required for pulse processing.	BT-1	Remembering

PART-B

Q.NO	QUESTIONS	BT LEVEL	COMPETENCE
1	Explain in detail about the steps involved in parboiling of paddy.	BT-2	Understanding
2	Draw layout of a modern rice mill and explain each process.	BT-2	Understanding

3	Brief about merits and demerits of parboiling of paddy.	BT-1	Remembering
4	Discuss about the traditional method of parboiling paddy.	BT-2	Understanding
5	Demonstrate modern milling of wheat.	BT-2	Understanding
6.	Describe mechanical extraction of oil seed processing.	BT-1	Remembering
7	Write short notes on rice polishers.	BT-1	Remembering
8	Differentiate pulse milling and wheat milling in detail.	BT-3	Applying
9	Brief about dehusking of paddy.	BT-3	Applying
10	Demonstrate millet processing technology.	BT-3	Applying
11	Detail about pulse milling process.	BT-2	Understanding
12	Explain oil seed processing with flow chart.	BT-2	Understanding
13	Write short notes on components of the wheat mill.	BT-1	Remembering
14	Draw a flowchart for dry milling and wet milling method of pulses.	BT-3	Applying
15.	Explain the improved parboiling method and milling of paddy using flowchart	BT-2	Understanding
16.	Write about the pulse processing technology	BT-2	Understanding
17.	Detail notes on oil extraction from groundnut.	BT-1	Remembering

PART – C

Q.NO	QUESTIONS	BT LEVEL	COMPETENCE
1.	Explain in detail about the modern rice mill process with a neat layout.	BT-3	Applying
2.	Elaborate parboiling of paddy process with its merits and demerits.	BT-2	Understanding
3.	Describe processing methods of pulses and oil seed.	BT-2	Understanding
4.	Differentiate wet milling and dry milling methods of pulses with flow charts.	BT-1	Remembering
5.	Write about the dehusking of paddy, types, merits and demerits	BT-3	Applying

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