

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2026
(Second Semester)

Branch – FOODS TECHNOLOGY MANAGEMENT

GRAIN SCIENCE TECHNOLOGY

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	List the layers of the bran in sequence from the outermost to the innermost. i) Pericarp, aleurone, testa ii) Aleurone, pericarp, testa iii) Pericarp, testa, aleurone iv) Testa, pericarp, aleurone	K1	CO1
	2	Infer the cereal that contributes significantly to ethanol production? i) Rice ii) Wheat iii) Oats iv) Maize	K2	CO1
2	3	Identify the traditional rice variety of Kerala that treats osteoporosis and liver cirrhosis. i) Kullakar ii) Navara iii) Mullan kaima iv) Thooyamalli	K1	CO2
	4	Give the technology commonly used in modern rice quality analyzers i) Ultrasound ii) X – ray diffraction iii) Gas chromatography iv) Digital image analysis	K2	CO2
3	5	Select the traditional equipment used to mill wheat. i) Stone grinder ii) Roller mill iii) Hammer mill iv) Rice huller	K1	CO3
	6	Associate glucoamylase with its action on starch. i) Synthesizes branched starch molecules ii) Converts glucose to starch iii) Hydrolyses branched starch molecules iv) Denatures starch	K2	CO3
4	7	Trace the major and minor millet from the following. i) Pearl millet and sorghum ii) Pearl millet and Kodo millet iii) Foxtail millet and Proso millet iv) Little millet and Barnyard millet	K1	CO4
	8	Why are millets with serious defects limited to not more than 1% by mass in quality standards? i) To ensure high grain quality and safety ii) To increase storage temperature iii) To reduce crop yield iv) To increase moisture content	K2	CO4
5	9	What happens if pulses are not properly conditioned before milling? i) Higher milling efficiency ii) Faster cooking iii) Improved polish quality iv) Increased breakage and lower dal yield	K1	CO5
	10	Clarify the role of roasting/steaming in cashew processing. i) Increasing kernel bitterness ii) Easier shell removal and reduced toxicity iii) Increasing moisture content iv) Protein destruction	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Articulate the effect of processing on the nutritive value of cereals.	K2	CO1
	(OR)			
	11.b.	Elaborate on dry milling of corn.		
2	12.a.	Draw the structure of rice and explain.	K3	CO2
	(OR)			
	12.b.	Explore any two value-added rice-based products.		
3	13.a.	Infer the significance of various functional properties of starch.	K4	CO3
	(OR)			
	13.b.	Examine the quality standards for wheat and wheat-based products.		
4	14.a.	Interpret the composition of millets.	K5	CO4
	(OR)			
	14.b.	Explain the importance of any three bioactive components present in millets.		
5	15.a.	Appraise the steps involved in extracting oil from oilseeds.	K5	CO5
	(OR)			
	15.b.	Determine the process involved in the manufacturing of soy protein isolate.		

SECTION -C (30 Marks)

Answer ANY THREE questions

ALL questions carry EQUAL Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Describe the steps involved in producing corn-based products and its quality standards.	K2	CO1
2	17	Illustrate a flowchart to explain the rice milling operations.	K3	CO2
3	18	Outline the significance of amylograph and alveograph in assessing the wheat dough rheology.	K4	CO3
4	19	Explain the steps involved in the manufacturing of millet-based value-added bakery products.	K5	CO4
5	20	Summarise the composition, anti-nutrients and toxic constituents in pulses.	K5	CO5