Question Paper

Exam Date & Time: 25-Nov-2022 (02:00 PM - 05:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

SEVENTH SEMESTER B.TECH END SEMESTER EXAMINATIONS, NOV 2022
DEPARTMENT OF INSTRUMENTATION AND CONTROL ENGINEERING

Farm Automation [ICE 4307]

Marks: 50 **Duration: 180 mins.**

A

Answer all the questions.

Instructions to Candidates: Missing data may be suitably assumed

1)		Explain different types of primary tillage and their respective machines. (CO1, PO 1,2,3, BL 2)	(5)
	A)		
	B)	Categorize the given farm operations into highly power intensive, intermediate level and highly control intensive operations. Farm operations: Water pumping, tillage, direct seeding, transplanting, weeding, plant protection, harvesting, threshing, milling and transport. (CO1, PO 1,2,3, BL 2)	(3)
	C)	Describe the following primary post-harvest operations; 1. Threshing 2. Winnowing.(CO3, PO 1,3,4, BL 2)	(2)
2)		Explain the components and working of micro-irrigation or localized irrigation system with the help of a diagram. (CO2, PO 1,5,6,7, BL 2)	(5)
	A)		
	B)	Analyse the impacts of mechanization on farm productivity? (CO1, PO 1,2,3, BL 4)	(3)
	C)	Draw the flow chart of primary processing steps in the post-harvest cereal system. (CO3, PO 1,3,4, BL 1)	(2)
3)		Elaborate the working of variable rate seeding machine with the help of a block diagram. (CO4, PO 1,2,3,5, BL 3)	(5)
	A)		
	B)	Explain the working of grain dryer with the help of a neat diagram. (CO3, PO 1,3,4, BL 2)	(3)
	C)	What are the advantages of precision farming? (CO4, PO 1,2,3,5, BL 2)	(2)
4)		What is MOSAICC? Analyse the components of MOSAICC with the help of a block diagram. (CO5, PO 1,4,6,7,8, BL 4)	(5)
	A)		
	B)	Explain the following secondary post-harvest operations; 1. Puffing 2. Flaking.(CO3, PO 1,3,4, BL 2)	(2)
	C)	What is conservation agriculture? Analyse the principles of conservation agriculture. (CO4, PO 1,2,3 5, BL 4)	(3)
5)		Analyse the challenges faced in implementing precision farming, in terms of economics,	(5)

A) environment, management and technology? (CO4, PO1,2,3,5, BL 4)

B) What is aquaponics? (CO5, PO 1,4,6,7,8, BL 2) (2)

C) What are different designs of hydroponic system? Explain any one of them. (CO5, PO 1,4,6,7,8, BL 2) (3)

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