#### DCP FOR CHAPTER-1: TRANSPORTATION IN PLANTS.

Number of	Sub-Topics.
period	
1	Transportation, conducting tissues- xylem( tracheid's,vessels ,wood parenchyma, wood fibre). Phloem (sieve tube, companion cells, phloem parenchyma, phloem, phloem fibre).
2	Water absorption by the roots, Root system of a plant, root hair, semi-permeable membrane, speciality of roothairs
3	Movement of water and minerals, Active transport, passive transport, osmosis, diffusion, ascent of sap,root pressure
4	Transpiration, transpiration pull, capillary force, cohesion and adhesion. Factors affecting the rateof transpiration, importance of transpiration in plants, Micronutrients, Macronutrients.
5	Recapitulation of the chapter



Class	X Subject			BIOLOGY	
Period.	1 Chapter-1		TRANSPORTATION IN PLANTS.		
Sub- Concepts	Transportation, conducting tissues- xylem( tracheid's,vessels ,wood parenchyma, wood fibre). Phloem (sieve tube, companion cells, phloem parenchyma, phloem, phloem fibre).				
TeachingAid To be used	Smart Class, F	Smart Class, PowerPoint presentation, classroom objects, charts.			
Learning Outcome	<ul> <li>On completion of this topic, students will be able to <ul> <li>Investigate how transportation occurs in plants.</li> <li>Understand the role of xylem</li> <li>Distinguish between transportation and translocation.</li> <li>Analyze how do transportation occurs in plants.</li> <li>Demonstrate how the upward movement of water occurs in the plants.</li> </ul> </li> </ul>				
SI. No	Step Wise (W	/hat to be do	one)		
1. Introduction.		<ul> <li>How</li> <li>Phot</li> <li>Tran</li> <li>Tran</li> </ul>	r plants prepare o tosynthesis isportation of foo isportation of wat	wn food. d. ter	
2. conducting tissues- xylem( tracheid's,vessels			Vascular bundle water conduct Xylem element	e. ing tissues. s	

	Tracheids Vessels Fibres Parenchyma
3. wood parenchyma, wood fibre).	<ul> <li>What is wood parenchyma.</li> <li>What is wood fibre.</li> </ul>
4. Phloem (sieve tube, companion cells, phloem parenchyma, phloem, phloem fibre).	<ul> <li>Translocation.</li> <li>Phloem elements.</li> <li>Sieve elements</li> <li>Companion Cells</li> <li>Fibres</li> <li>Parenchyma</li> <li>Difference between xylem and phloem</li> </ul>
5.Home Assignment	Exercise Question No-3 and LongAnswer Question No-9



Period.         2         Chapter-1         TRANSPORTATION IN PLANTS.           Sub- Concepts         Water absorption by the roots, Root system of a plant, root hair, semi-permeable membrane, speciality of roothairs           TeachingAid To be used         Smart Class, PowerPoint presentation, classroom objects, charts.           Recapitulation.         Testing previous knowledge – 1. What is translocation.?           2. What is vascular bundle?         On completion of this topic, students will be able to 0 no completion of this topic, students will be able to 0 no completion of this topic, students more ment occurs in the plants.           0 Distinguish between fibrous root and tap roots.         Analyze how water and minerals movement occurs.           0 Demonstrate how the conduction of water occurs.         Demonstrate how the conduction of water occurs.           1. Water absorption by the roots         > Lateral branch > Main roots > Water absorption.           2. Root system of a plant         > Tap root system > Fibrous root system           3. Root hair         > Epidermal cells > Root hair           4. semi- permeable membrane, speciality of root hairs         > Freely permeable. > Surface area           S.Home Assignment         Exercise Question No-8 and LongAnswer Question No-1	Class	х	Subject		BIOLOGY		
Sub- Concepts         Water absorption by the roots, Root system of a plant, root hair, semi-permeable membrane, speciality of roothairs           TeachingAid To be used         Smart Class, PowerPoint presentation, classroom objects, charts.           Recapitulation.         Testing previous knowledge – 1. What is translocation.?           Learning Outcome         On completion of this topic, students will be able to • Investigate how water absorption occurs in the plants. • Understand the root system in plants. • Distinguish between fibrous root and tap roots. • Analyze how water and minerals movement occurs. • Demonstrate how the conduction of water occurs. • Main roots • Main roots • Main roots • Septient of the permeable. • Septient of hair           4. semi- permeable membrane, speciality of root hairs         Freely permeable. • Surface area           5.Home Assignment	Period.	2 Chapter-1 TRANSPORTATION IN PLANTS.			ON IN PLANTS.		
Toot hair, semi-permeable membrane, speciality of roothairs         TeachingAid To be used       Smart Class, PowerPoint presentation, classroom objects, charts.         Recapitulation.       Testing previous knowledge – <ol> <li>What is translocation.?</li> <li>What is vascular bundle?</li> </ol> Learning Outcome       On completion of this topic, students will be able to <ol> <li>Investigate how water absorption occurs in the plants.</li> <li>Understand the root system in plants.</li> <li>Distinguish between fibrous root and tap roots.</li> <li>Analyze how water and minerals movement occurs.</li> <li>Demonstrate how the conducction of water occurs.</li> </ol> SI. No     Step Wise (What to be done)         1. Water absorption by the roots       > Lateral branch         2. Root system of a plant       > Tap root system         3. Root hair       > Epidermal cells         3. Root hair       > Freely permeable.         permeable membrane, speciality of root hairs       > Surface area         5.Home Assignment       Exercise Question No-8 and LongAnswer Question No-1	Sub- Concepts	Water absorption by the roots, Root system of a plant,					
TeachingAid       Smart Class, PowerPoint presentation, classroom objects, charts.         To be used       Testing previous knowledge –         I.       What is translocation.?         2.       What is vascular bundle?         Learning       On completion of this topic, students will be able to         Outcome       Investigate how water absorption occurs in the plants.         •       Understand the root system in plants.         •       Distinguish between fibrous root and tap roots.         •       Analyze how water and minerals movement occurs.         •       Demonstrate how the conducction of water occurs.         SI. No       Step Wise (What to be done)         1. Water       > Lateral branch         absorption by       > Lateral branch         the roots       > Water absorption.         2. Root system of a plant       > Tap root system         plant       > Epidermal cells         > Root hair       > Epidermal cells         > Surface area       > Surface area         speciality of root hairs       > Surface area         5.Home       Exercise Question No-8 and LongAnswer Question No-1		root hair, sem	root hair, semi-permeable membrane, speciality of roothairs				
Recapitulation.       Testing previous knowledge –         I. What is translocation.?       I. What is translocation.?         2. What is vascular bundle?         Learning       On completion of this topic, students will be able to         Outcome       Investigate how water absorption occurs in the plants.         Image: Understand the root system in plants.       Understand the root system in plants.         Image: Distinguish between fibrous root and tap roots.       Analyze how water and minerals movement occurs.         Image: Distinguish between fibrous root and tap roots.       Demonstrate how the conduction of water occurs.         Image: Distinguish between fibrous root and tap roots.       Demonstrate how the conduction of water occurs.         Image: Distinguish between fibrous root and tap roots.       Demonstrate how the conduction of water occurs.         Image: Distinguish between fibrous root and tap roots.       Demonstrate how the conduction of water occurs.         Image: Distinguish between fibrous root and tap roots.       Demonstrate how the conduction of water occurs.         Image: Distinguish between fibrous root system       Yester absorption.         Image: Distinguish between f	TeachingAid	Smart Class, F	PowerPoint	presentation, clas	sroom objects, charts.		
Instant Previous Monecuge         1. What is translocation.?         2. What is vascular bundle?         Outcome         On completion of this topic, students will be able to         • Understand the root system in plants.         • Distinguish between fibrous root and tap roots.         • Analyze how water absorption occurs in the plants.         • Distinguish between fibrous root and tap roots.         • Analyze how water and minerals movement occurs.         • Demonstrate how the conduction of water occurs.         SI. No       Step Wise (What to be done)         1. Water         absorption by         the roots         > Lateral branch         > Main roots         > Water absorption.         2. Root system of a plant         > Fibrous root system         a Root hair         * Epidermal cells         > Root hair         * Semi-permeable.         membrane, speciality of root hairs         S.Home       Exercise Question No-8 and LongAnswer Question No-1	Recanitulation	Testing previ	ous knowler	lge			
1. What is translocation.?         2. What is vascular bundle?         Learning Outcome         0n completion of this topic, students will be able to <ul> <li>Investigate how water absorption occurs in the plants.</li> <li>Understand the root system in plants.</li> <li>Distinguish between fibrous root and tap roots.</li> <li>Analyze how water and minerals movement occurs.</li> <li>Demonstrate how the conducction of water occurs.</li> </ul> <li>St. No</li> <li>Step Wise (What to be done)</li> <li>1. Water absorption by the roots</li> <li>Lateral branch</li> <li>Main roots</li> <li>Water absorption.</li> <li>2. Root system of a plant</li> <li>Tap root system</li> <li>plant</li> <li>Epidermal cells</li> <li>Root hair</li> <li>Freely permeable.</li> <li>Semi-permeable.</li> <li>Surface area</li> <li>Surface area</li> <li>Surface area</li> <li>Exercise Question No-8 and LongAnswer Question No-1</li>	necapitalation.	1 What is		-6C			
Learning Outcome       On completion of this topic, students will be able to <ul> <li>Investigate how water absorption occurs in the plants.</li> <li>Understand the root system in plants.</li> <li>Distinguish between fibrous root and tap roots.</li> <li>Analyze how water and minerals movement occurs.</li> <li>Demonstrate how the conducction of water occurs.</li> </ul> <li>Step Wise (What to be done)         <ul> <li>Water absorption by the roots</li> <li>Lateral branch</li> <li>Main roots</li> <li>Water absorption.</li> </ul> </li> <li>Root system of a plant</li> <li>Fibrous root system</li> <li>Root hair</li> <li>Epidermal cells</li> <li>Root hair</li> <li>Freely permeable.</li> <li>Semi-permeable.</li> <li>Surface area</li> <li>Sturface Question No-8 and LongAnswer Question No-1</li> <li>Assignment</li>		1. Wilduis		II. <u>r</u>			
Learning       On completion of this topic, students will be able to         Outcome       Investigate how water absorption occurs in the plants.         Understand the root system in plants.       Distinguish between fibrous root and tap roots.         Analyze how water and minerals movement occurs.       Demonstrate how the conducction of water occurs.         SI. No       Step Wise (What to be done)         1. Water absorption by the roots       > Lateral branch         > Main roots       > Water absorption.         2. Root system of a plant       > Tap root system         3. Root hair       > Epidermal cells         > Root hair       > Freely permeable.         > Surface area       > Surface area         Shairs       Exercise Question No-8 and LongAnswer Question No-1		2. What is	vascular bur	ndle?			
Outcome       Investigate now water absorption octs in the plants.         • Understand the root system in plants.       • Understand the root system in plants.         • Distinguish between fibrous root and tap roots.       • Analyze how water and minerals movement occurs.         • Demonstrate how the conducction of water occurs.       • Demonstrate how the conduction of water occurs.         SI. No       Step Wise (What to be done)         1. Water absorption by the roots       > Lateral branch         > Main roots       > Water absorption.         2. Root system of a plant       > Tap root system         plant       > Fibrous root system         3. Root hair       > Epidermal cells         > Root hair       > Freely permeable.         > Surface area       > Surface area         speciality of root hairs       > Surface area         5.Home       Exercise Question No-8 and LongAnswer Question No-1	Learning	On completic	on of this top	oic, students will b	e able to		
Analyze how water and minerals movement occurs.     Analyze how water and minerals movement occurs.     Demonstrate how the conducction of water occurs.     Demonstrate how the conducction of water occurs.     Lateral branch     Anainyze bow water and minerals movement occurs.     Demonstrate how the conducction of water occurs.     Lateral branch     Anain roots     Main roots     Water absorption.     Z. Root system of a      Prap root system     Anain      Fibrous root system     S.Root hair     Preely permeable.     Preely permeable.     Semi-permeable.     Semi-permeable.     Surface area     Surface area     S.Home     Assignment     Exercise Question No-8 and LongAnswer Question No-1	Outcome	<ul> <li>Invest</li> <li>Under</li> </ul>	stand the r	oot system in plar	nts.		
<ul> <li>Analyze how water and minerals movement occurs.</li> <li>Demonstrate how the conduvction of water occurs.</li> <li>SI. No</li> <li>Step Wise (What to be done)</li> <li>1. Water absorption by the roots</li> <li>Lateral branch</li> <li>Main roots</li> <li>Water absorption.</li> <li>2. Root system of a plant</li> <li>Fibrous root system</li> <li>A Root hair</li> <li>Epidermal cells</li> <li>Root hair</li> <li>Freely permeable.</li> <li>Semi -permeable.</li> <li>Surface area</li> <li>Surface area</li> <li>S.Home Assignment</li> </ul>		Distin	guish betwe	en fibrous root ar	nd tap roots.		
Demonstrate how the conduction of water occurs.     SI. No     Step Wise (What to be done)      Water     absorption by     the roots <ul> <li>Lateral branch</li> <li>Main roots</li> <li>Water absorption.</li> </ul> <li>Root system of a             plant             <ul> <li>Fibrous root system</li> <li>Root hair</li> <li>Epidermal cells</li> <li>Root hair</li> <li>Freely permeable.</li> <li>Semi-permeable</li> <li>Surface area</li> </ul> </li> <li>S.Home         <ul> <li>Assignment</li> <li>Exercise Question No-8 and LongAnswer Question No-1</li> </ul> </li>		Analy	ze how wate	er and minerals m	ovement occurs.		
SI. No       Step Wise (What to be done)         1. Water absorption by the roots       > Lateral branch > Main roots > Water absorption.         2. Root system of a plant       > Tap root system         3. Root hair       > Epidermal cells > Root hair         4. semi- permeable membrane, speciality of root hairs       > Freely permeable. > Surface area         5.Home Assignment       Exercise Question No-8 and LongAnswer Question No-1		Demo	Demonstrate how the conduvction of water occurs.				
1. Water       absorption by         absorption by       > Lateral branch         > Main roots       > Water absorption.         2. Root system of a plant       > Tap root system         3. Root hair       > Epidermal cells         > Root hair       > Freely permeable.         permeable membrane, speciality of root hairs       > Surface area         5.Home Assignment       Exercise Question No-8 and LongAnswer Question No-1	Sl. No	Step Wise (W	/hat to be do	one)			
absorption by the roots       > Lateral branch         > Main roots       > Water absorption.         2. Root system of a plant       > Tap root system         3. Root hair       > Epidermal cells         > Root hair       > Freely permeable.         + Semi- permeable membrane, speciality of root hairs       > Freely permeable.         5.Home Assignment       Exercise Question No-8 and LongAnswer Question No-1	1. Water	× .					
<ul> <li>Main roots</li> <li>Water absorption.</li> <li>Root system of a plant</li> <li>Fibrous root system</li> <li>Root hair</li> <li>Epidermal cells</li> <li>Root hair</li> <li>Freely permeable.</li> <li>Semi -permeable.</li> <li>Surface area</li> <li>Surface area</li> <li>Exercise Question No-8 and LongAnswer Question No-1</li> </ul>	absorption by the roots	Lateral branch					
2. Root system of a plant       > Tap root system         3. Root hair       > Epidermal cells         3. Root hair       > Epidermal cells         > Root hair       > Freely permeable.         4. semi-permeable membrane, speciality of root hairs       > Surface area         5.Home Assignment       Exercise Question No-8 and LongAnswer Question No-1		<ul> <li>Water absorption</li> </ul>					
<ul> <li>2. Root system of a plant</li> <li>3. Root hair</li> <li>4. semi-permeable membrane, speciality of root hairs</li> <li>5.Home Assignment</li> <li>2. Root system</li> <li>2. Fibrous root system</li> <li>3. Fibrous root system</li> <li>3. Root hair</li> <li>3. Root hair</li> <li>4. Semi-permeable.</li> <li>5. Home Assignment</li> </ul>	2 Deet eveters of e	VVale		•			
3. Root hair       > Epidermal cells         3. Root hair       > Root hair         4. semi- permeable membrane, speciality of root hairs       > Freely permeable.         5.Home Assignment       Exercise Question No-8 and LongAnswer Question No-1	plant			i system			
<ul> <li>3. Root hair</li> <li>A. semi- permeable membrane, speciality of root hairs</li> <li>5.Home Assignment</li> <li>Freely permeable. &gt; Semi -permeable. &gt; Surface area</li> </ul>		> Enideri	FIDFOUS mail cells	root system			
4. semi- permeable membrane, speciality of root hairs       > Freely permeable.         5.Home Assignment       > Surface area	3. Root hair	<ul> <li>Root have</li> </ul>	air				
4. semi- permeable membrane, speciality of root hairs       > Freely permeable.         5.Home Assignment       > Surface area							
4. semi- permeable membrane, speciality of root hairs       > Freely permeable.         5.Home Assignment       > Surface area			<u> </u>				
permeable       Serial -permeable.         membrane,       Surface area         speciality of root       Surface area         hairs       Exercise Question No-8 and LongAnswer Question No-1         5.Home       Exercise Question No-8 and LongAnswer Question No-1	4. semi-		Freely p	oermeable.			
speciality of root hairs  5.Home Assignment  Exercise Question No-8 and LongAnswer Question No-1	permeable membrane.	<ul> <li>Semi-permeable.</li> <li>Surface area</li> </ul>					
hairs     Exercise Question No-8 and LongAnswer Question No-1       5.Home     Exercise Question No-8 and LongAnswer Question No-1	speciality of root						
5.Home Exercise Question No-8 and LongAnswer Question No-1 Assignment	hairs						
Assignment	5.Home	Exercise Questic	on No-8 and Lo	ongAnswer Question	No-1		
	Assignment						



Class	Х		Subject		BIOLOGY
Period.	3	Chapter	-1	TRANSPORTAT	ION IN PLANTS.
Sub-Concepts	Movement of water and minerals, Active transport, passive transport, osmosis, diffusion, ascent of sap.root pressure			port, f sap,root pressure	
Teaching AidTo be used	Smart Cla	ss, Power	Point pr	esentation, class	room objects, charts.
Recapitulation	Testing p 1. Wha 2. Wha	<ul> <li>Testing previous knowledge –</li> <li>1. What is semipermeable membrane?</li> <li>2. What is cell san?</li> </ul>			
Learning Outcome	<ul> <li>On completion of this topic, students will be able to</li> <li>Define active transport.</li> <li>Explain osmosis and diffusion.</li> <li>Outline and analyses the process of diffusion and osmosis.</li> <li>Analyze the processes of transpiration, transpiration pull.</li> </ul>				
SI. No	Step Wise	e (What to	o be don	e)	
1. Movement of water and minerals		<ul> <li>Type</li> <li>Isote</li> <li>Hyp</li> <li>Hyp</li> </ul>	es of solu onic solu otonic so er tonic	ution. Ition plution solution.	
2. Active transport, passive transport	<ul><li>Act</li><li>Pas</li></ul>	ive transp ssive trans	port sport.		

3.osmosis, diffusion	image: concentration before diffusion     image: concentration before diffusion       image: concentration before diffusion     atter diffusion
3. ascent of sap,root pressure	<ul> <li>cell sap</li> <li>Ascent of sap</li> <li>Cell to cell diffusion</li> <li>Hydrostatic pressure</li> <li>Root pressure</li> </ul>
5.Home Assignment	Exercise Question No-9 and LongAnswer Question No-3



Class	X Subject		t	BIOLOGY.	
Period.	4	Chapter	-1	TRANSPORTATIO	ON IN PLANTS.
Sub-Concepts	Transpiration, transpiration pull, capillary force, cohesion and adhesion. Factors affecting the rateof transpiration, importance of transpiration in plants, Micronutrients, Macronutrients.			ecting the rateof transpiration, onutrients, Macronutrients.	
Teaching Aid To be used	Smart Class, PowerPoint presentation, classroom objects, charts				
Recapitulation.	Testing previous knowledge – 1. What is root pressure? 2. Difference between osmosis and diffusion.				
Learning Outcome.	<ul> <li>On completion of this topic, students will be able to</li> <li>Identify and explain what are plant nutrients.</li> <li>Define capillary force.</li> <li>List the plant nutrients.</li> <li>Categories the micronutrients and macronutrients.</li> </ul>				

Sl. No	Step Wise (What to be done)				
1. Transpiration, transpiration pull	<ul> <li>Transpiration.</li> <li>Transpirational pull</li> <li>How transpiration occurs</li> <li>Stomata</li> <li>Role of stomata in transpiration.</li> </ul>				
2. capillary	<ul> <li>Capilary action.</li> </ul>				
and adhesion.	<ul> <li>Cohesion.</li> <li>Adhession.</li> </ul>				
3. Factors	Sunlight Wind				
affecting the rate of transpiration.	<ul> <li>Temperature.</li> </ul>				
,	<ul> <li>Humidity</li> <li>Importance of transpiration in plants</li> </ul>				
4	<ul> <li>Uses of water in plants</li> </ul>				
Micronutrients, Macronutrients	Plant nutrients.				
	Micro nutrients.				
	Macro nutrients.				
5.Home Assignment	Exercise Question No-10 and LongAnswer Question No-7,8				