- 1. You are provided with specimen S and solutions X and Y, which are of different concentrations.
 - (a) (i) Label three test tubes T_1 , T_2 and T_3 . To each of the test tubes, add a mixture of solution X and solution Y as indicated in table 1.

Table 1

Test tube	Volume of X (cm ³)	Volume of Y (cm ³)
T ₁	0.0	10.0
T ₂	5.0	5.0
T ₃	10.0	0.0

- (ii) Using a 5 mm cork borer, obtain three potato cylinders from specimen S and trim each cylinder to a uniform length of 3.0 cm.
- (iii) Place **one** potato cylinder in each of the test tubes T₁, T₂ and T₃ and ensure it is completely immersed in the solution. Keep the cylinders in the solutions for 25 minutes. (You may continue doing other work.)
- (iv) After 25 minutes, remove the potato cylinders from solutions and measure the final length of each of the cylinders. Record your results in table 2 and determine the changes in length of each potato cylinder.

Table 2

(03 marks

Test tube	Initial length (cm)	Final length (cm)	Change in length (cm) (Final length - Initial length)
T ₁	3.0	Profession &	som at telling by sounds
T ₂	3.0	A Port March	to 1909 the second control of
T ₃	3.0	abotan for	or to lead the same of

(i)	Explain the change in length of the potato of	cylinder in the test
	tube 11.	(04 marks)
		aranani.
		Angle grade
		tube 1

	(ii)	Why is the change in length of the potato cylinder T_2 different from that in T_3 ?	in test tube (04 marks).
			344
	1897	present to its or ginal state?	
(c)	(i)	Feel the potato cylinder from T_1 between your fing bending without breaking it. Repeat the procedure cylinder in T_3 . Describe your observations.	
		Potato cylinder from T ₁	(02 marks)
	18.25 (M	province with specimens F , Quarts warming prant	ou no r
	ja s	т А воени эде ет го изи, приот Дитирийны т	y (u)
	112.36	Potato cylinder from T ₃ d A bine O Zirominoora	(02 marks)
(01 mark)		02	
(Atamate)		Specines C.	
ent the	doso i	 Describe the observable structures in one half of specimens Q and R.)
(03 merks)	(ii)	What is the significance of the observations in (c)(i)	to the plant?
)		(02 marks)
		and the second state and the second second	(31 × 191)
			San har
		3	Turn Over

	an isot ara	Potato cylinder from T ₃ in agrants at the Wall (02)	
	·····		
		ow can the observed changes in the potato cylinder in test tube	 T ₁ be mark)
	e for the p	(c) (i) Feel the perato cylinder Train T. between your in acuding without breaking in Repeat the procedure cylinder in T. Describe your observations	
		Potato cylinder from F.	
2.	You are pr	rovided with specimens P, Q and R which are plant organs.	
(a) Cut	longitudinally through each of the specimens Q and R.	
	(i)	Observe the cut surfaces and state the type of fruit to which specimens Q and R belong.	
		Specimen Q (01 m	ark)
		Specimen R (01 m	ark)
	(ii)	Describe the observable structures in one half of each of the specimens Q and R.	
		Specimen Q (03 man	rks)
	(a)		

TOTAL HOLE

)	your drawing.	10
(iii)	B and type of disp	ersal of specimen (
	over that of R ?	(03 mark
		and the second second
Usir		P is dispersed.
 Usir		P is dispersed.
Usir		P is dispersed.
Usir		P is dispersed.
Usir		P is dispersed.
		P is dispersed.
antare	ng observable features, explain how specimen	P is dispersed. (03 mark
alen as imarei	ng observable features, explain how specimen	P is dispersed. (03 mark
alen na emarei	ng observable features, explain how specimen	P is dispersed. (03 mark
alen as imarei	ng observable features, explain how specimen	P is dispersed. (03 mark
alen na emarei	ng observable features, explain how specimen	P is dispersed. (03 mark

(02 marks	 Draw and lab of your draw 	pel one half of specimen R. State ing.	the magnification (06 marks
		What are the advantages of the D dver that of R	
		THE WELL STORY	
bear.	specimen P is disp		
(8 man £0)			
3. You a		ecimens T and U obtained from a r	
(a)	Observe and feel th your fingers.	ne working surface of each of the sp	pecimens with
	(i) Describe who	at you observed and felt.	
ecord the (0) mark)	Specimen T	Put one half of specimen R on a liength of the fruit from the stalk t	(02 marks)
	mo	Length	
Turn Over		6	

And States		
		m 4 II
(ii) From you	ar observations, identify	the specimens T and U.
		(01 mai
T		(01 mar
U Outline four st	ructural differences betv	veen specimens T and U . (04 mark
A	T	U
(i)	more the state of the large	CONTRACTOR OF THE STATE OF THE
(ii)		
(iii)		
(iv)		
	r and real fact that the	the real behavior to point
Gu to the	e function of each specir	men to the mammal. (02 mar
	e function of	
T		
U		

	Zapium two	o adaptations of specimen U to	(04 marks
			and
J and U.	e specimens) n your observations, identify th	nord. (a)
Ditt (4)			
(d) (i)	Identify the Record you	longest portion of specimen T	and then measure it. (½ mark
(04 marr	Length	cm	- AM
(::)		bel specimen T. State your mag	mification (3½ marks
(ii)	Draw and la	bei specimen 1. State your mag	giirication. (572 marks
			(ii)) iii
		Control to tape a	(0)
		Control tople	
			(iii)
			(ii))
			(iii) (iii) (vii)
		the function of each spectars	(vi)