



MODUL PINTAS 2024
TINGKATAN 5

4551/3

BIOLOGI
Ujian Amali
Kertas 3

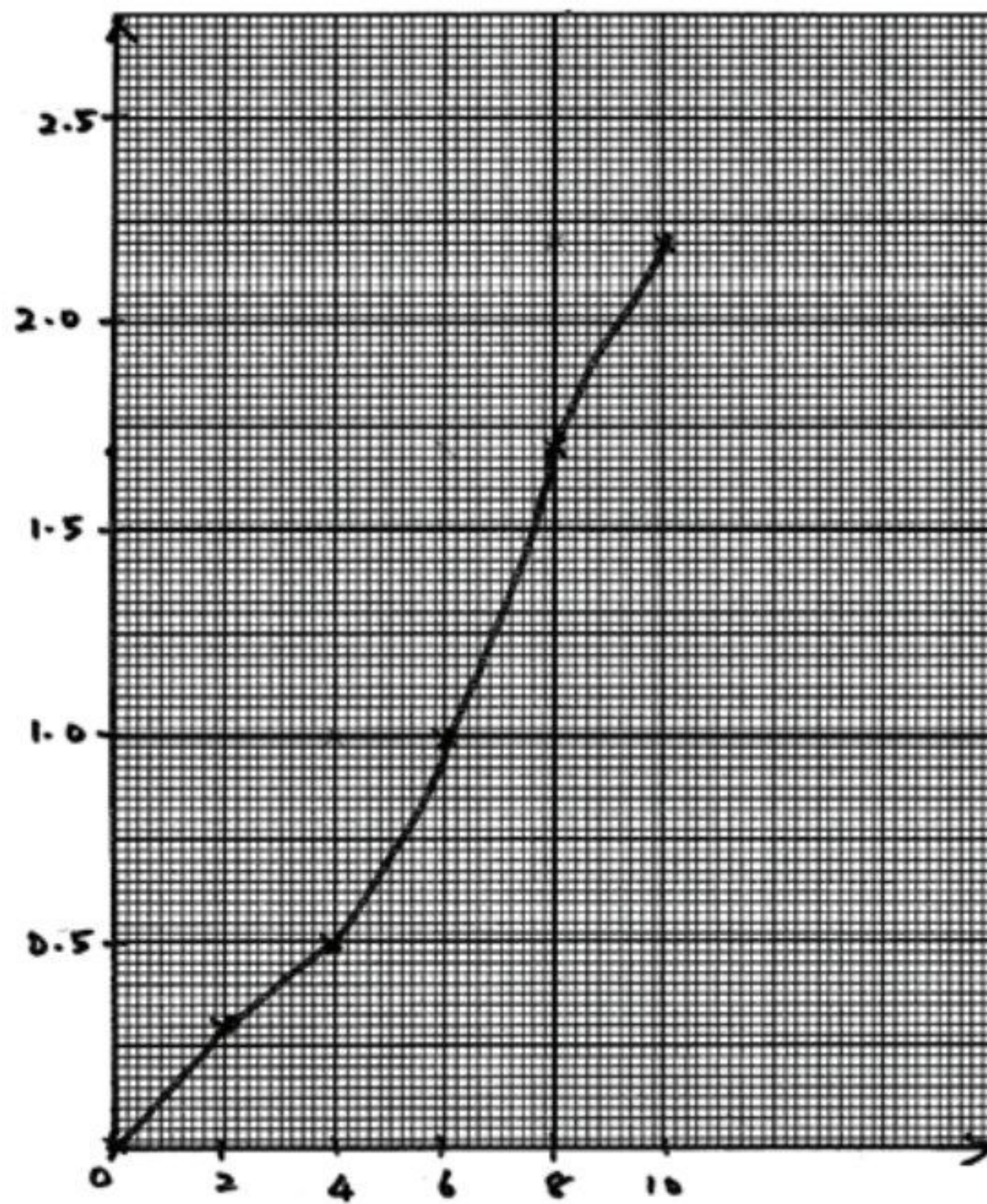
45 minit

PERATURAN PEMARKAHAN
BIOLOGI K3
4551/3

No	Skema markah <i>Answer scheme</i>	Markah <i>Marks</i>	Jumlah <i>Total</i>														
(a)	<p>Boleh melengkapkan jadual berdasarkan dua kriteria. <i>Able to complete a table based on two criteria.</i></p> <p>Jawapan: <i>Answer:</i></p> <table border="1" data-bbox="411 839 1413 1136"> <thead> <tr> <th data-bbox="411 839 793 937">Masa (minit) <i>Time (minute)</i></th> <th data-bbox="793 839 898 937">0</th> <th data-bbox="898 839 1003 937">2</th> <th data-bbox="1003 839 1108 937">4</th> <th data-bbox="1108 839 1213 937">6</th> <th data-bbox="1213 839 1318 937">8</th> <th data-bbox="1318 839 1413 937">10</th> </tr> </thead> <tbody> <tr> <td data-bbox="411 937 793 1136">Aras larutan sukrosa (cm) <i>Level of sucrose solution (cm)</i></td> <td data-bbox="793 937 898 1136">0.0</td> <td data-bbox="898 937 1003 1136">0.3</td> <td data-bbox="1003 937 1108 1136">0.5</td> <td data-bbox="1108 937 1213 1136">1.0</td> <td data-bbox="1213 937 1318 1136">1.7</td> <td data-bbox="1318 937 1413 1136">2.2</td> </tr> </tbody> </table> <p style="text-align: right;"> PU dimanipulasi + unit <i>Manipulated variable + unit</i> </p> <p style="text-align: right;"> PU bergerak balas + unit <i>Responding variable + unit</i> </p> <p style="text-align: right;"> Bacaan bagi aras larutan sukrosa <i>Reading for level of sucrose solution</i> </p>	Masa (minit) <i>Time (minute)</i>	0	2	4	6	8	10	Aras larutan sukrosa (cm) <i>Level of sucrose solution (cm)</i>	0.0	0.3	0.5	1.0	1.7	2.2	1 1 1	3
Masa (minit) <i>Time (minute)</i>	0	2	4	6	8	10											
Aras larutan sukrosa (cm) <i>Level of sucrose solution (cm)</i>	0.0	0.3	0.5	1.0	1.7	2.2											
(b)	<p>Boleh menyatakan pemboleh ubah: <i>Able to state variables:</i></p> <p>Jawapan: <i>Answer:</i></p> <p>(i) dimanipulasikan : Masa <i>Manipulated : Time</i></p> <p>(ii) bergerak balas : Aras larutan sukrosa 30% <i>Responding : Level of 30% sucrose solution</i></p> <p>(iii) dimalarkan : Isi padu/ Kepekatan larutan sukrosa <i>Constant : Volume/ concentration of sucrose solution</i></p> <p style="text-align: center; font-size: 1.2em; font-weight: bold;">t.me/cikgufazliebiosensei</p>	1 1 1	3														

(c)	<p>Boleh menyatakan inferens bagi eksperimen. <i>Able to state the inference for the experiment.</i></p> <p>Jawapan: <i>Answer:</i></p> <p>Aras larutan sukrosa 30% dalam tiub kapilari meningkat kerana air meresap masuk ke dalam tiub Visking secara osmosis <i>The level of 30% sucrose solution in the capillary tube increases because water diffuses into the Visking tubing via osmosis.</i></p>	1	1
(d)	<p>Boleh menyatakan hipotesis bagi eksperimen ini. <i>Able to state the hypothesis for the experiment.</i></p> <p>Jawapan: <i>Answer:</i></p> <p>P1: Molekul air meresap dari kawasan keupayaan air tinggi ke kawasan keupayaan air rendah. <i>Water molecules diffuse from higher water potential area to lower water potential area</i></p> <p>P2: Molekul air boleh meresap merentasi tiub Visking berbanding molekul sukrosa tidak boleh meresap merentasi tiub Visking <i>Water molecules can diffuse across Visking tubing than sucrose molecules that cannot diffuses across the Visking tubing</i></p> <p>P3: Saiz molekul air lebih kecil berbanding saiz molekul sukrosa <i>The size of water molecules is smaller than sucrose molecules</i></p> <p>P4: Molekul bersaiz kecil dapat merentasi membran tiub Visking/separa telap berbanding molekul bersaiz besar <i>Small size molecules can diffuse the Visking tubing/ semi-permeable membrane than larger size molecules</i></p> <p style="text-align: right;">Mana-mana 1P <i>Any 1P</i></p>	1 1 1 1	1
(e)	<p>Boleh memplot graf aras larutan sukrosa melawan masa. <i>Able to plot the graph of level of sucrose solution against time.</i></p> <p>Jawapan: <i>Answer:</i></p>		3

Aras larutan sukrosa (cm)
Level of sucrose solution



Masa (minit)
Time (minute)

PU bergerak balas + unit
Responding variable + unit

1

PU dimanipulasikan + unit
Manipulated variable + unit

1

Sambung 6 Titik
Joint 6 Points

1

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<p>(f)</p>	<p>Boleh menyatakan hubungan antara aras larutan sukrosa 30% dengan masa. <i>Able to state the relationship between level of 30% sucrose solution with time.</i></p> <p>Jawapan: <i>Answer:</i></p> <p>P1: Semakin bertambah masa, semakin bertambah aras larutan sukrosa 30%. <i>The higher the time, the higher the level of 30% sucrose solution.</i></p> <p>P2: air meresap masuk ke dalam tiub Visking secara osmosis <i>water diffuses into Visking tubing via osmosis</i></p> <p>P3: Kerana molekul air bersaiz kecil <i>Because water molecule small in size</i></p> <p style="text-align: right;">Mana-mana 2P Any 2P</p>	<p>1</p> <p>1</p> <p>1</p>	<p>2</p>
<p>(g)</p>	<p>Boleh menerangkan ramalan aras larutan sukrosa 30% di dalam tiub kapilari jika air suling di dalam bikar digantikan dengan larutan sukrosa 60%. <i>Able to explain the level of 30% sucrose solution in the capillary tube if distilled water in beaker is replace with 60% sucrose solution.</i></p> <p>Jawapan: <i>Answer:</i></p> <p>P1: Berkurang/ menurun <i>Decreases/ lower</i></p> <p>P2: Larutan sukrosa 60% lebih hipertonik berbanding larutan sukrosa 30% <i>60% sucrose solution is more hypertonic than 30% sucrose solution</i></p> <p>P3: Kepekatan molekul air lebih tinggi dalam tiub Visking berbanding dalam bikar// keupayaan air dalam tiub Visking lebih tinggi berbanding dalam bikar <i>Concentration of water molecule is higher in Visking tubing than in beaker// water potential in beaker is higher than in Visking tubing</i></p> <p>P4: Menyebabkan air meresap keluar dari tiub Visking <i>Causes water to diffuse out of Visking tubing by osmosis</i></p> <p style="text-align: right;">Mana-mana 2P Any 2P</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p>2</p>