

**PERATURAN PEMARKAHAN PERCUBAAN SPM 2024
KERTAS 3 BIOLOGI**

No	Skema	Markah
(a)	Prosedur / Procedure : P1 : Label 2 tabung uji sebagai P dan Q. <i>Label 2 test tubes as P and Q.</i> P2 : Tambahkan <u>3 ml ampai kanji 1%</u> ke dalam setiap tabung uji. <i>Add 3 ml of 1% starch suspension to each test tube.</i> P3 : Isikan <u>tabung uji P dengan 3 ml larutan (enzim) amilase 0.5%</u> dan <u>tabung uji Q dengan 3 ml air suling.</u> <i>Fill test tube P with 3 ml of 0.5% amylase solution and test tube Q with 3 ml of distilled water.</i> P4 : Rendam kedua-dua tabung uji di dalam kukus air <u>bersuhu 37°C selama 15 minit.</u> <i>Soak both test tubes in a water bath with a temperature of 37°C for 15 minutes.</i> P5 : <u>Selepas 15 minit,</u> keluarkan 2 ml larutan dari tabung uji P dan masukkan ke dalam tabung uji berlainan. Tambah 3 titis <u>larutan Benedict ke dalam tabung uji</u> tersebut dan panaskan tabung uji dalam kukus air mendidih selama 5 minit. <u>Rekodkan warna kandungan.</u> <i>After 15 minutes, remove 2 ml of the solution from test tube P and put it into a different test tube. Add 3 drops of Benedict's solution to that test tube and heat the test tube in a boiling water bath for 5 minutes. Record the colour of the content.</i> P6 : Tambah 2 titis <u>larutan iodine ke dalam baki kandungan tabung uji P.</u> Perhati dan <u>rekodkan warna kandungan.</u> <i>Add 2 drops of iodine solution to the remainder of test tube P. Observe and record the colour of the contents.</i> P7 : Ulang langkah 5 dan 6 untuk <u>tabung uji Q.</u> <i>Repeat steps 5 and 6 for test tube Q.</i> KRITERIA : K1 – Langkah mengendalikan pembolehubah dimanipulasikan, P3, P7 K2 – Langkah mengendalikan pembolehubah bergerakbalas, P5, P6 K3 – Langkah mengendalikan pembolehubah dimalarkan, P2, P4/P5 K4 – Langkah berjaga-jaga, P4	CV(K3) MV(K1) CV(K3) CV(K3) Precaution(K4) CV(K3) RV(K2) RV(K2) MV(K1) 1 1 1 1 4 markah

(b)	(i) Pembolehubah dimanipulasikan / Manipulated variable : Kehadiran amilase <i>Presence of amylase</i>	1												
	(ii) Pembolehubah bergerakbalas / Responding variable : Kehadiran gula penurun <i>Presence of reducing sugar</i>	1												
	(iii) Pembolehubah dimalarkan / Constant variable : Suhu kukus air pada 37 °C// kepekatan ampai kanji //isipadu campuran// isipadu ampai kanji <i>Temperature of water bath at 37 °C//concentration of starch suspension // volume of mixture// volume of starch suspension</i>	1												
		3 markah												
(c)	Hipotesis / Hypothesis : Amilase menghidrolisis kanji kepada gula penurun. <i>Amylase hydrolyses starch to a reducing sugar.</i>	1												
		1 markah												
(d)	Bina jadual untuk merekodkan pemerhatian / Construct a table to record observation <table border="1"> <tr> <th>Tabung uji / Test tube</th> <th>Kandungan campuran / Content of mixture</th> <th>Ujian Iodin / Iodine test</th> <th>Ujian Benedict / Benedict's Test</th> </tr> <tr> <td>P</td> <td>3 ml ampai kanji dan 3 ml larutan (enzim) amilase <i>3 ml starch suspension and 3 ml amylase solution</i></td> <td>Kekal Perang / Remained brown</td> <td>Biru berubah Mendakan merah bata / Hijau / Kuning / Jingga <i>Blue changed to brick red precipitate / Green / Yellow / Orange</i></td> </tr> <tr> <td>Q</td> <td>3 ml ampai kanji dan 3 ml air suling <i>3 ml starch suspension and 3 ml distilled water</i></td> <td>Perang berubah biru gelap / Brown changed to dark blue</td> <td>Kekal biru / Remained blue</td> </tr> </table> Nota : Ruangan tabung uji tidak diambil kira untuk markah <i>Note : Column for test tube is not taken for marks</i>		Tabung uji / Test tube	Kandungan campuran / Content of mixture	Ujian Iodin / Iodine test	Ujian Benedict / Benedict's Test	P	3 ml ampai kanji dan 3 ml larutan (enzim) amilase <i>3 ml starch suspension and 3 ml amylase solution</i>	Kekal Perang / Remained brown	Biru berubah Mendakan merah bata / Hijau / Kuning / Jingga <i>Blue changed to brick red precipitate / Green / Yellow / Orange</i>	Q	3 ml ampai kanji dan 3 ml air suling <i>3 ml starch suspension and 3 ml distilled water</i>	Perang berubah biru gelap / Brown changed to dark blue	Kekal biru / Remained blue
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