

SKEMA PEMARKAHAN BAHAGIAN A KERTAS 2
PEPERIKSAAN PERCUBAAN SPM MPSM KEDAH 2018

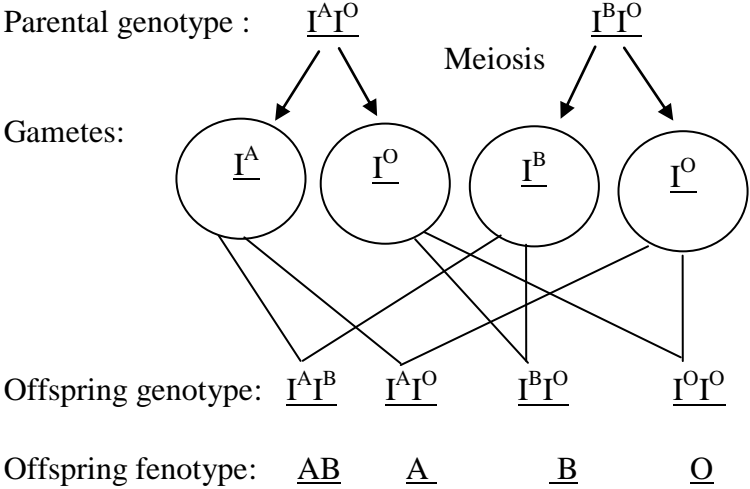
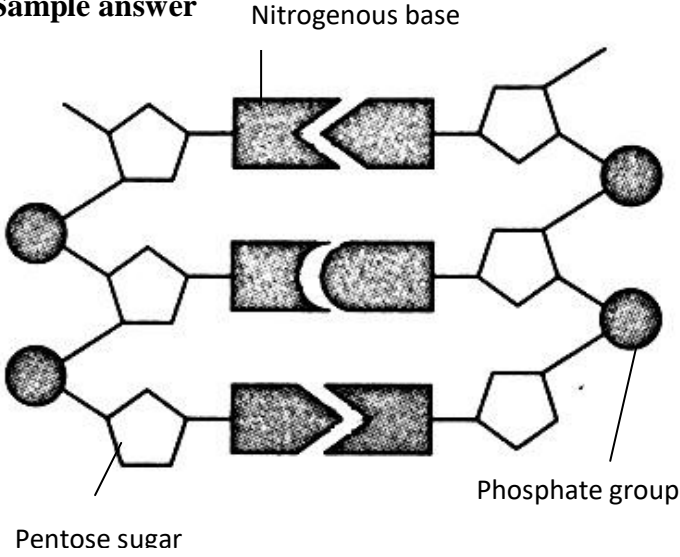
QUESTION NO.		MARKING CRITERIA	SUB MARKS	TOTAL MARKS
1	(a)	(i)	P : Chromosome / Chromatin <i>Kromosom/ Kromatin</i> Q: Ribosome <i>Ribosom</i>	1 1 2
		(ii)	Store genetic information (which will determine the character and function of cells) <i>Menyimpan maklumat genetik (yang akan menentukan sifat dan fungsi sel)</i>	1 1
		(iii)	P1 : supplying genetic code / genetic information <i>membekalkan kod genetik/ maklumat genetik</i> P2 : taken to Q via RNA// RNA carries genetic code <i>dibawa ke Q melalui RNA</i> P3 : Q synthesises protein (based on accepted genetic information from P) <i>Q sintesis protein (berdasarkan maklumat genetik yang diterima dari P)</i> (Any 2 /mana-mana 2)	1 1 1 2
	(b)		P1 : Amylase // Amylase saliva <i>Amilase // Amilase liur</i> P2 : Ribosom synthesise protein <i>Ribosom mensintesis protein</i> P3 : RER carries proteins that are synthesized (by Ribosomes) in transport vesicles <i>JEK mengangkut protein yang disintesis (oleh Ribosom) dalam vesikel angkutan</i> P4 : Golgi apparatus process the protein into an enzyme, <i>Jasad Golgi memproses protein tersebut menjadi enzim,</i> P5 : wrapping and transport inside secretion vesicles <i>membungkus dan mengangkut di dalam vesikel rembesan</i> (Any 3 /mana-mana 3)	1 1 1 1 3

QUESTION NO.		MARKING CRITERIA	SUB MARKS	TOTAL MARKS													
	(c)	(i)	R : gene//alel <i>Gen//alel</i>	1 1													
		(ii)	F : pale / helpless / weak <i>pucat/ tidak bermaya/ lemah</i> P1 : abnormal red blood cells <i>bentuk sel darah merah yang tidak normal</i> P2 : surface area of red blood cells decreases <i>luas permukaan sel darah merah berkurang</i> P3 : less hemoglobin <i>haemoglobin kurang</i> P4 : difficult to combine with oxygen to forms oksihaemoglobin <i>sukar bergabung dengan oksigen membentuk oksihemoglobin</i> P5 : reducing the efficiency of oxygen transport to body cells <i>mengurangkan kecekapan pengangkutan oksigen ke sel-sel badan</i> (F and any 2 P's / F dan mana-mana 2P)	1 1 1 1 1	Max 3												
			Total/ <i>Jumlah</i>	12													
2.	(a)	(i)	R : Meiosis S : Mitosis	1 1	2m												
		(ii)	<table border="1"> <thead> <tr> <th>R</th> <th>S</th> </tr> </thead> <tbody> <tr> <td>The number of chromosomes is haploid</td> <td>The number of chromosomes is diploid</td> </tr> <tr> <td>Occur in reproductive cell</td> <td>Occur in somatic cell</td> </tr> <tr> <td>Number of daughter cells formed (at the end of division) is four.</td> <td>Number of daughter cells formed (at the end of division) is two</td> </tr> <tr> <td>Number of divisions is two.</td> <td>Number of divisions is one.</td> </tr> <tr> <td>Crossing over occurs.</td> <td>Crossing over does not occur.</td> </tr> </tbody> </table> Any Two	R	S	The number of chromosomes is haploid	The number of chromosomes is diploid	Occur in reproductive cell	Occur in somatic cell	Number of daughter cells formed (at the end of division) is four.	Number of daughter cells formed (at the end of division) is two	Number of divisions is two.	Number of divisions is one.	Crossing over occurs.	Crossing over does not occur.	1 1 1 1 1	Max 2m
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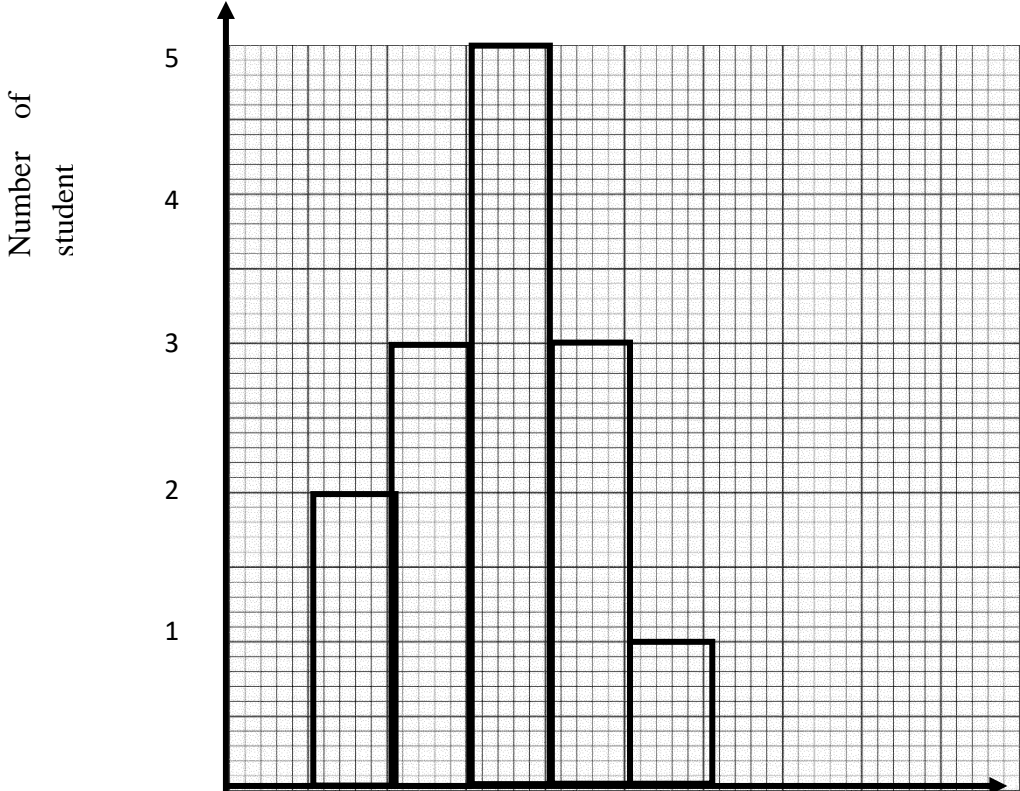
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	(iii)	P1 : Its tail undergo mitosis P2 : Mitosis will produce new cell. P3 : Identical to parent cell. Any two	1 1 1	Max 2m
	(b)	Parent cell : 4 Daughter cell 1 : 3@5 Daughter cell 2 : 5@3	1 1 1	3
	(c)	P1 : gene mutation P2 : uncontrolled mitosis P3 : cells divide repeatedly P4: forms undifferentiated mass of cell P4 : caused by chemical and radioactive substances. Mana-mana 3	1 1 1 1 1	Max 3m
		Total/ <i>Jumlah</i>	12	
3.	(a)	(i) P: Komensalisme <i>Komensalisme</i> Q: Prey-predator <i>Mangsa-pemangsa</i> R: Saprofitisme <i>Saprofitisme</i>	1 1 1	3m
	(ii)	Remora fish gets: <i>Ikan remora mendapat:</i> P1-free transportation <i>pengangkutan percuma</i> P2- free food bits <i>sisa-sisa makanan daripada jerung</i> P3- protection from enemy <i>perlindungan daripada musuh</i> Mana-mana 1	1 1 1	1
	(b)	(i) Biological control <i>Kawalan Biologi</i>	1	1m

QUESTION NO.	MARKING CRITERIA	SUB MARKS	TOTAL MARKS
	<p>(ii) P1: Rats (prey) and owl (predator) <i>Tikus adalah mangsa, burung hantu adalah pemangsa</i></p> <p>P2: Rat eaten by owls <i>Tikus dimakan oleh burung hantu</i></p> <p>P3: An increase in prey (rats) population followed by an increase in the predator (owls) because easy to get food supply <i>Apabila tikus(mangsa) bertambah, burung hantu (pemangsa) pun bertambah kerana mudah mendapat makanan</i></p> <p>P4: When the owls population increases, the number/population of rats will decrease because the rats have been eaten by the owls/the rats are food/prey for owls <i>Apabila populasi burung hantu bertambah, populasi tikus akan berkurang kerana tikus dimakan oleh burung hantu.</i></p> <p>P5 : When the population of rats decreases, the number/population of owls will decreases because the quantity of food decreases/rats die/the rats migrate to other places <i>Apabila populasi tikus berkurang, populasi burung hantu akan berkurang kerana kuantiti makanan berkurang</i></p> <p>P6 : When the population of owls decreases, the number/population of rats will increases because the number /population of owls to eat them is decreases <i>Apabila populasi burung hantu berkurang, populasi tikus akan meningkat kerana populasi burung hantu yang memakan tikus berkurang</i></p> <p>P6 : The population size of rats and owls will increase or decrease at certain average value and always at a dynamic equilibrium. <i>Saiz populasi tikus dan burung hantu akan bertambah atau berkurang pada nilai tertentu dan sentiasa berada pada keseimbangan dinamik.</i></p> <p style="text-align: right;">Mana-mana 4</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p></p> <p></p> <p></p> <p></p> <p></p> <p></p> <p>Max 4m</p>

QUESTION NO.			MARKING CRITERIA	SUB MARKS	TOTAL MARKS
	(c)		P1- Dead organism cannot be breakdown <i>Organisma mati tidak dapat diurai</i> P2- cannot return the minerals/ calcium / ferum into the soil. <i>- mineral/ kalsium,ferum dan lain tidak dapat dikembalikan ke dalam tanah-</i> P3-Other plants cannot use the mineral <i>Tumbuhan lain tidak boleh menggunakan mineral</i> P4-Fertility of the soil decreases <i>kesuburan tanah berkurang</i> P5-Persekitaran dipenuhi sampah sarap P6-Pencemaran alam sekitar P7-Penyakit berjangkit bertambah Mana-mana 3	1 1 1 1 1 1	Max 3m
			Total/ Jumlah	12	
4.	(a)	(i)	Able to state the dominant allele and recessive allele in ABO blood group. Sample answer Dominant allele : I^A / I^B Recessive allele : I^O	1 1	2m

QUESTION NO.	MARKING CRITERIA	SUB MARKS	TOTAL MARKS
	<p>(ii) Able to complete the schematic diagram in diagram 4.1.</p> <p>Sample answer:</p> <p>Parental phenotype : blood group A x blood group B</p> <p>Parental genotype : $I^A I^O$ $I^B I^O$</p> <p>Gametes: </p> <p>Offspring genotype: $I^A I^B$ $I^A I^O$ $I^B I^O$ $I^O I^O$</p> <p>Offspring fenotype: <u>AB</u> <u>A</u> <u>B</u> <u>O</u></p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p>4m</p>
(b)	<p>(i) Able to name structures P.</p> <p>Sample answer</p> <p>P : Phosphate</p>	<p>1</p>	<p>1</p>
	<p>(ii) Able to complete the diagram to show a DNA molecule.</p> <p>Sample answer</p>  <p style="text-align: center;"><i>Drawing - 1 mark</i> <i>Label (at least two correct label) - 1 mark</i></p>		<p>2m</p>

QUESTION NO.		MARKING CRITERIA	SUB MARKS	TOTAL MARKS												
	(c)	<p>Able to explain why only one band from each child's DNA fingerprint match the mother's DNA fingerprint and father's DNA fingerprint.</p> <p>Sample answer</p> <p>P1: Each band represents / contains genetic content / DNA / allele / chromosomes</p> <p>P2: through meiosis</p> <p>P3: become haploid cell / gamete</p> <p>P4: Gametes fuse to form zygote</p> <p>P5: Each zygote / child inherits half of genetic content / DNA / chromosomes / allele</p> <p>P6: during fertilisation</p> <p style="text-align: right;">(Any 3)</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	3m												
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5.	(a)	(i)														
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="text-align: center;">Height (cm) <i>Ketinggian (cm)</i></td> <td style="text-align: center;">157- 159</td> <td style="text-align: center;">160- 162</td> <td style="text-align: center;">163- 165</td> <td style="text-align: center;">166- 168</td> <td style="text-align: center;">169- 171</td> </tr> <tr> <td style="text-align: center;">Number of students <i>Bilangan murid</i></td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">5</td> <td style="text-align: center;">2</td> <td style="text-align: center;">1</td> </tr> </tbody> </table> <p style="text-align: right;">5 tick- 2m 3-4 tick- 1m 0-2 tick- 0m</p>	Height (cm) <i>Ketinggian (cm)</i>	157- 159	160- 162	163- 165	166- 168	169- 171	Number of students <i>Bilangan murid</i>	2	3	5	2	1		Max 2m
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(ii)	 <p data-bbox="220 521 300 689">Number of student</p> <p data-bbox="539 1243 933 1317">157-159 169-162 163-165 166-168 169-171</p> <p data-bbox="1026 1261 1209 1335">Height Ketinggian /cm</p> <p data-bbox="869 1440 1244 1514">Paksi + Skala : 1m Titik + bentuk (Rapat) : 1m</p>		2m

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	(iii)		<table border="1"> <thead> <tr> <th></th> <th>Height</th> <th>Shape of earlobe</th> </tr> </thead> <tbody> <tr> <td>P1</td> <td>Differences between individuals are slight with intermediates</td> <td>Distinct categories with no intermediates</td> </tr> <tr> <td>P2</td> <td>Shows normal distribution curve</td> <td>Bar chart/ do not give normal distribution curve</td> </tr> <tr> <td>P3</td> <td>Quantitative/can be measured</td> <td>Qualitative/cannot be measured</td> </tr> <tr> <td>P4</td> <td>Large number of genes involved</td> <td>Controlled by a single gene</td> </tr> <tr> <td>P5</td> <td>Influenced by environmental conditions</td> <td>Not influenced by environmental conditions / influenced by genetic factors</td> </tr> </tbody> </table> <p style="text-align: right;">Any one P's</p>		Height	Shape of earlobe	P1	Differences between individuals are slight with intermediates	Distinct categories with no intermediates	P2	Shows normal distribution curve	Bar chart/ do not give normal distribution curve	P3	Quantitative/can be measured	Qualitative/cannot be measured	P4	Large number of genes involved	Controlled by a single gene	P5	Influenced by environmental conditions	Not influenced by environmental conditions / influenced by genetic factors	1 1 1 1 1	Max 1m
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(b)	(i)	Individual X: Male Individual Y: Male		1 1	2m																		
	(ii)	Individual X		1	1m																		
(c)	(i)	P1: Longer legs P2: Broader hips compared to other male P3: Absent, delayed or incomplete puberty P4: Small testes and penis P5: Enlarged breast tissues <p style="text-align: right;">Any 2 P's</p>		1 1 1 1 1	Max 2m																		
	(ii)	P1: homologous chromosome fail to separate P2: during meiosis I P3: lead to extra X chromosome <p style="text-align: right;">Any 2 P's</p>		1 1 1	Max 2m																		
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