Koleksi Soalan KBAT Biology 2015

Soalan 1/16

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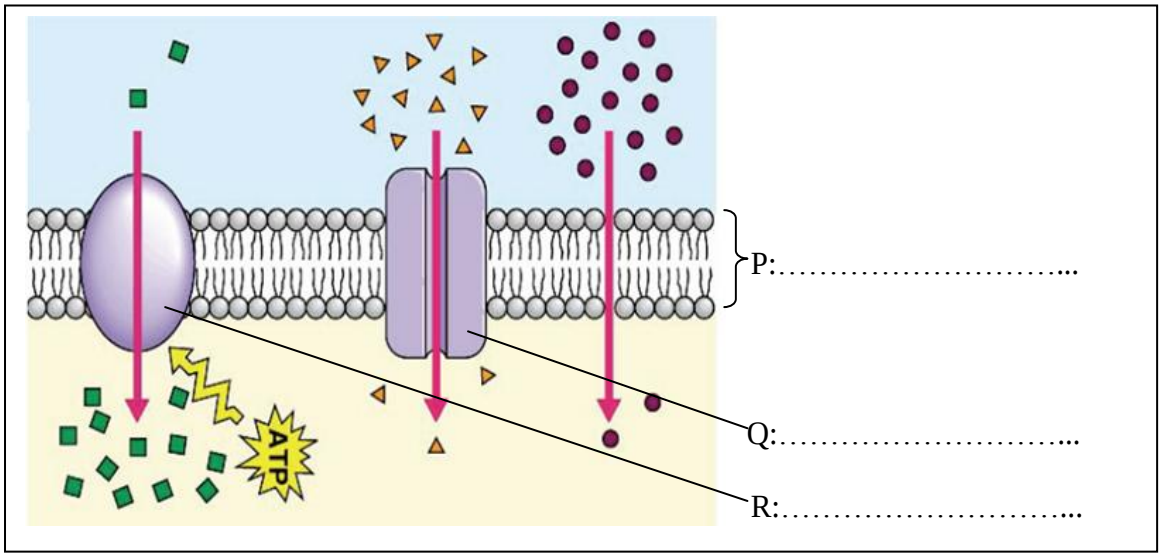
Answer scheme translated by SPM Soalan

Soalan 1

Rajah 1.1 menunjukkan satu model membran plasma.
Diagram 1.1 shows a model of plasma membrane



Rajah 1.1
Diagram 1.1

(a) i. Namakan struktur yang berlabel P, Q dan R pada Rajah 1.1.
Name the structures labelled P, Q and R at Diagram 1.1

Mengingat [3 markah]

ii. Terangkan proses yang berlaku pada R.
Explain *the process that occurs at R.*

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Kefahaman [2 markah]

(b) Membran plasma ini telah didedahkan kepada racun respirasi. Pada pendapat anda, apakah kesan racun respirasi terhadap pengangkutan bahan di membran plasma?

The plasma membrane has been exposed to respirational poison. In your opinion, what is the effect of the respirational poison towards the transportation of substance across plasma membrane?

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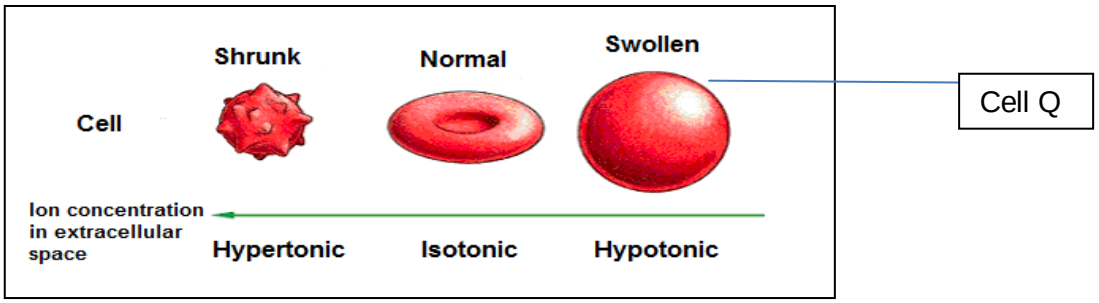
Aplikasi [2 markah]

c.

. Larutan hipertonik adalah satu larutan yang mengandungi lebih bahan terlarut daripada sel yang diletakkan di dalamnya. Larutan isotonik merupakan satu penyelesaian di mana jumlah yang sama bahan larut dan larutan itu boleh didapati di dalam dan di luar sel Larutan hipotonik adalah satu larutan yang mengandungi kurang bahan larut daripada sel yang diletakkan di dalamnya. *A hypertonic solution is a solution that contains more solute than the cell which is placed in it.* *An isotonic solution is a solution in which the same amount of solute and solution is available inside and outside of the cell.* *A hypotonic solution is a solution that contains less solute than the cell which is placed in it.*

Diagram 1 and Table 1 shows the result from that study.



Rajah 1

Larutan *Solution*	Kepekatan NaCl(g/100cm^3) *Concentration of NaCl (g/100cm^3)*	Peratus sel yang mengecut dan meletus *Percentage of crenated cell and haemolyse cell*	
		Mengecut *Crenated*	Meletus *Haemolyse*
R	0.35	-	52
S	0.40	-	28
T	0.47	-	-
U	0.50	9	-
V	0.50	35	-
W	0.55	86	-

Jadual 1

i. Namakan sel Q.
Name cell Q

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Mengingat [1 markah]

ii. Berdasar Jadual 1, nyatakan kepekatan natrium klorida dalam plasma darah. Berikan sebab anda?
Based on Table 1, state the concentration of sodium chloride in the blood Plasma.. Give your reason?

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Kefahaman [2 markah]

iii. Sel Q telah dimasukkan ke dalam air suling. Pada pendapat anda, apakah yang akan berlaku kepada sel Q?.
Cell Q has been placed in distilled water. In your opinion, what will happen to cell Q?.

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Aplikasi [2 markah]

SAMPLE ANSWER / CONTOH JAWAPAN

	Cadangan jawapan	Markah	
a i	P; phospholipid bilayer/fosfolipid dwilapisan Q: pore protein/protein liang R: carrier protein/protein pembawa	3	
ii	Process/Proses R – active transport/pengangkutan aktif -Substance diffuse from higher concentration to lower concentration -Against the concentraion gradient/ -Through carrier protein/ -Energy is required/ Pergerakan bahan dari kawasan berkepekatan rendah ke kawasan berkepekatan tinggi Melawan cerun kepekatan Melalui protein Pembawa Memerlukan tenaga	2	
b	-When the cell is exposed to the respirational poison, respiration is unable to be carried out. -Active transport does not occur. -This is due to no formation of energy. Jika sel didedahkan kepada racun respirasi Pengangkutan aktif tidak berlaku Racun akan merencatkan proses respirasi Tiada tenaga dihasilkan	2	
C i	Red blood cell (erythrocytes) Sel darah merah/eritrosit	1	
ii	0.74g/100cm^3 -No cell burst (or undergoi haemolysis) and no cell become wrinkles(undergoes crenation) Tiada sel yang meletus/haemolisis dan tiada yang mengecut/krenasi	2	
iii	-The cell will burst/Sel akan meletus -The concentration of distilled water is hypotonic to the red blood cell. -Water molecules diffuse into the red blood cell through osmosis. -The cell bursts due to ansence of cell wall//cannot withstand high osmotic pressure Air suling adalah larutan hipotonik kepada sel darah merah.	2	

	Molekul air meresap masuk ke dalam sel secara osmosis Sel meletus sebab tiada dinding sel//tidak boleh menampung tekanan osmotik yang tinggi		
			12 markah

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