



Introduction

Q1: Human cell membrane:

- a) Is impermeable to fat soluble substances.
 - b) Consists almost entirely of protein molecules.
 - c) Is a fluid rather than a solid matrix.
 - d) Consists almost entirely of carbohydrate molecules.
 - e) Has no structural proteins.
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Q2: Concerning the proteins of the cell membrane:

- a) They act as carriers.
 - b) They act as receptors.
 - c) They function as pumps for transporting ions.
 - d) They function as enzymes.
 - e) All of the above are correct.
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Q3: the human cell membrane:

- a) Is permeable to water.
 - b) Is more permeable to Na⁺ than K⁺ at rest.
 - c) Is impermeable to fat soluble substances.
 - d) Consists of protein molecules only.
 - e) None of the above is correct.
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Q4: Concerning the cell membrane which of the following is correct:

- a) Integral proteins act as hormones.
 - b) Peripheral proteins act as carriers.
 - c) O₂ and CO₂ moves across the membrane by simple diffusion.
 - d) O₂ and CO₂ moves across the membrane by facilitated diffusion.
 - e) Alcohol and fatty acids move across the membrane by facilitated diffusion.
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Q5: Simple diffusion:

- a) Occurs against concentration gradient.
 - b) Needs a carrier.
 - c) Needs energy.
 - d) Is the means by which gases moves from air to blood.
 - e) Both a & d are correct.
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Q6: An example of simple diffusion is:

- a) Glucose transport.
 - b) Amino acid transport.
 - c) Na⁺ - K⁺ pump.
 - d) Calcium pump.
 - e) Gas exchange.
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Q7: The rate of diffusion of substance down its concentration gradient is:

- a) Inversely proportional to the area between the two regions.
 - b) Inversely proportional to the concentration gradient.
 - c) Directly proportional to the thickness of the membrane.
 - d) Inversely proportional to the number of channels and transporters.
 - e) Directly proportional to the temperature.
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Q8: The rate of diffusion of a particle across a membrane will increase if:

- a) The lipid solubility of the particle increases.
 - b) The area of the membrane decreases.
 - c) The thickness of the membrane increases.
 - d) The size of the particle increases.
 - e) The concentration gradient of the particle decreases.
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Q9: The rate of diffusion of a substance down its concentration gradient is:

- a) Inversely proportional to the number of channels.
 - b) Inversely proportional to the size of the molecule.
 - c) Directly proportional to the thickness of the membrane.
 - d) Inversely proportional to the surface area of the membrane.
 - e) Inversely proportional to the lipid soluble substances.
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Q10: ICF differs from ECF in the ICF contains a higher:

- a) Na⁺ concentration.
 - b) Cl⁻ concentration.
 - c) Glucose concentration.
 - d) Protein concentration.
 - e) Bicarbonate concentration.
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Q11: Osmosis:

- a) Occurs against concentration gradient.
 - b) Needs a carrier.
 - c) Needs energy.
 - d) Is an active process.
 - e) Is a passive process.
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Q12: Osmosis:

- a) Movement of water from low concentration to high concentration.
 - b) Movement of solutes from low concentration to high concentration.
 - c) Needs energy.
 - d) Does not need a carrier.
 - e) Needs a carrier.
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Q13: Filtration:

- a) Is an active transport. b) Needs energy. c) Needs carrier.
d) All of the above are correct. e) None of the above is correct.
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Q14: Concerning the primary active transport:

- a) It is a passive process. b) Energy is used directly. c) Energy is used indirectly.
d) Does not need a carrier. e) Substances move from high concentration to low concentration area.
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Q15: Concerning the secondary active transport:

- a) It is a passive process. b) Energy is used directly. c) Energy is used indirectly.
d) Does not need a carrier. e) Substances move from high concentration to low concentration area.
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Q16: Active transport differs from facilitated diffusion in that:

- a) It needs a carrier protein. b) It requires energy. c) It occurs with concentration gradient.
d) Does not need a carrier. e) All of the above are correct.
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Q17: Plasma is part of the:

- a) ECF. b) ICF. c) Interstitial fluid. d) All of the above. e) Both b & c are correct
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Q18: in an adult person weighting 70 kg, the % of body fluid is about:

- a) 60 – 70 %. b) 30 – 40 %. c) 80 – 90 %. d) 20 – 30 %. e) 56 – 60 %.
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Q19: ICF differs from ECF in that the ICF has a higher concentration of:

- a) Cl⁻. b) K⁺. c) Glucose. d) Sodium. e) Ca⁺⁺.
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Q20: Intracellular fluid (ICF):

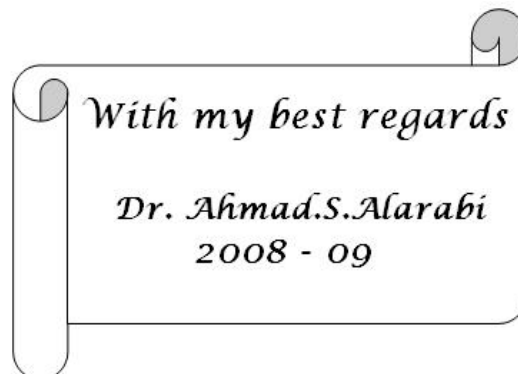
- a) Constitutes about 1/3 of the total body water.
b) Has higher concentration of Na⁺ than ECF.
c) Has higher concentration of Cl⁻ than ECF.
d) Has lower concentration of protein than ECF.
e) Has lower concentration of Ca⁺⁺ than ECF.
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Q21: a red blood cell will swell the most when it is placed in a solution containing:

- a) 0.01 %NaCl. b) 20 % NaCl. c) 10 % NaCl. d) 0.9 % NaCl. e) 1% NaCl.
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The Answers key

Question	Answer	Question	Answer
1	c	11	e
2	e	12	d
3	a	13	e
4	c	14	b
5	d	15	c
6	e	16	b
7	e	17	a
8	a	18	e
9	b	19	b
10	d	20	e
		21	a



With my best regards

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