END OF TERM 1 EXAMS 2019

S.5 BIOLOGY

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PAPER 2

TIME: 2HRS: 30MINS

INSTRUCTIONS;

Attempt question 1 which is compulsory and three other questions from section B.

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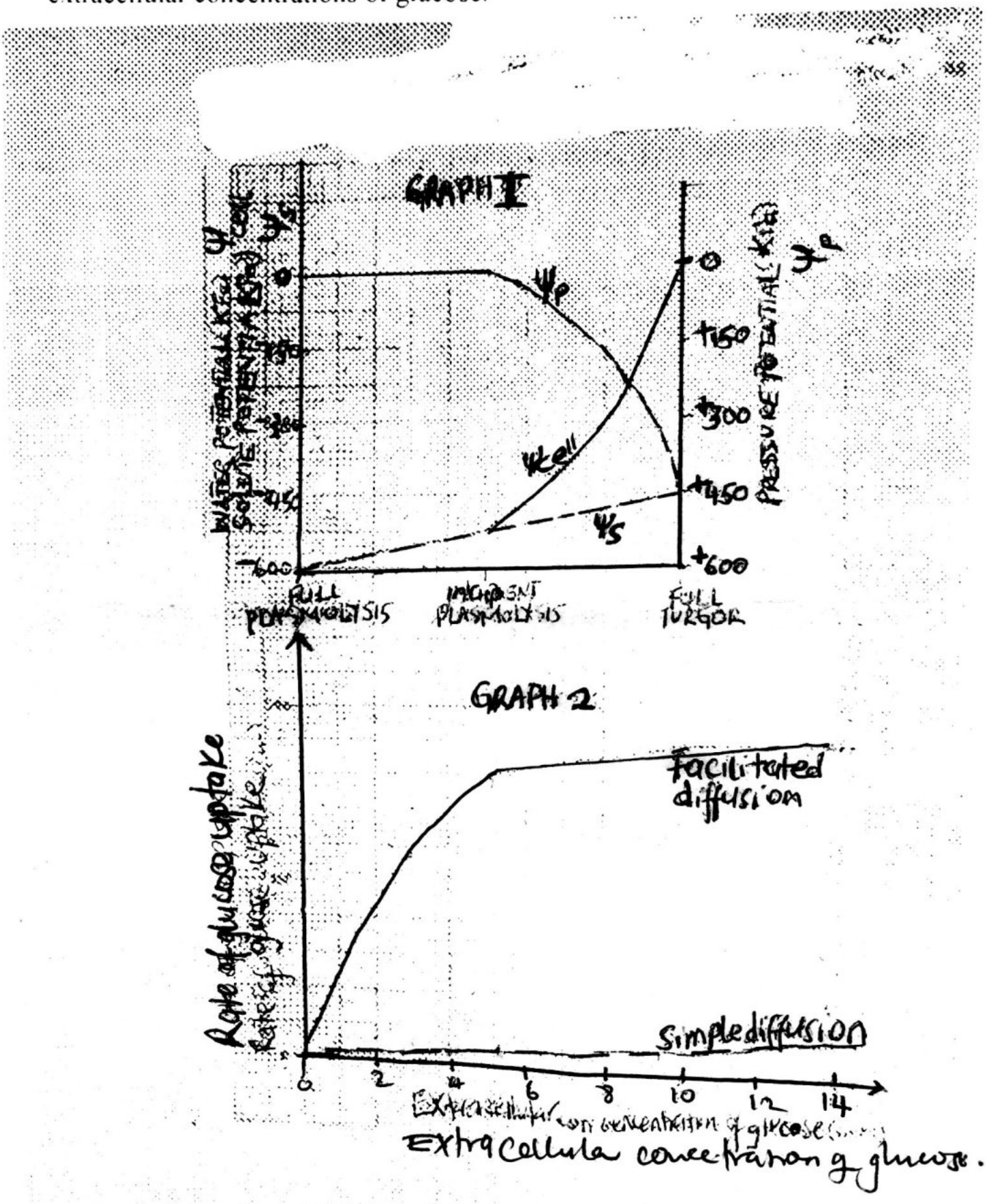
SECTION	MARK
A	
B. NO. 2	
NO. 3	
NO. 4	
NO. 5	
NO. 6	

1. Graph 1 shows changes in the different potentials of a plasmolysed plant cell placed in a hypotonic solution and graph 2 shows the rate of up take of glucose by blood using simple and facilitated diffusion at varying extracellular concentrations of glucose.



a) Define the terms;

i) water potential (02mks)

ii) pressure potential (02mks)

iii) solute potential (02mks)

b) Describe the changes in;

i) pressure potential (03mks)

ii) water potential from full plasmolysis to full turgor (03mks)

c) Explain the changes in;

i) Pressure potential (09mks)

ii) solute potential from full plasmolysis to full turgor (03mks)

d) Compare the effect of increasing extracellular concentration of glucose on the rates of uptake of glucose by simple and facilitated diffusion. (02mks)

e) Explain the effect of increasing extracellular concentration of glucose on the rate of up take of glucose when the diffusion is facilitated. (11mks)

f) Outline the differences between the functioning of carrier proteins in facilitated diffusion and those in active transport. (03mks)

SECTION B (60MKS)

2a Give four similarities and four differences between the transmission electron microscope and the compound light microscope. (08mks)

b) State six advantages of the compound light microscope over an electron microscope. (06mks)

c) Describe six differences between a bacterial cell and an animal cell. (06mks)

3 a) State the adaptation of the following structure to their functions,

i) Parenchyma tissue 3marks

ii) Sclerenchyma tissue 3maks

iii) Collenchymas tissue 3marks

iv) Mesophyll tissue 3marks

b) Describe the structural and functional differences between bones and cartilage .

i) functional 4marks

ii) structural 4marks

4 a) i outline the functions of membranes in eukaryotic cells 4marks

ii How are the surface membranes of animal cells suited to their functions 8mark

b) Describe how the structure and the distribution of mitochondria are related to their functions in living cells 8marks

5a) what is ment by the following terms

i) Action spectrum 2marks

ii) Absption spectrum 2marks

iii) Photophosphorylation 2marks

b) Explain the events that occur to conver sunlight energy into organic compounds in autotrophs 14 marks

6a) what is ment by the term guttation , and where does it occur ? 3marks

b) Explain the process of loading and off loading of materials during translocation 6marks

c) Explain the following theories of opening and closing of the stomata:

i) photosynthetic theory (5marks)

ii) proton electrogradiant theory (6marks)