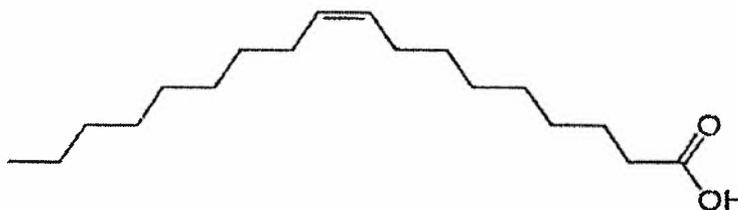


Indian Institute of Science Education and Research – Kolkata, Date 20-02-2019  
Mid Sem Exam. LS4203, Full marks: 20, Time: 3:30 PM to 5:00 PM

Answer any (only) four:  $4 \times 5 = 20$

1. Discuss how dietary sugars a) starch, b) maltose, c) lactose, d) sucrose enter into glycolysis? Explain why in contrast to liver, muscle glycogen does not contribute directly to blood glucose? Explain what happens to a person with mutation (inactivation) in Glycogen synthase? Why cyanide is very toxic to health?  $2+1+1+1=5$
2. How many molecules of ATP will be produced by the complete aerobic oxidation of the following compound? With explanation. 5



3. Why animal could not survive with only on acetate as sole carbon sources, compare to plant and microbes can survive with acetate as sole carbon source? In adult animal if the food is only lipid: what will be the consequences? What are the importances of Pentose phosphate pathway?  $2+1.5+1.5=5$
4. How Dark phase of photosynthesis is regulated by light? Explain: what is photorespiration? Explain CAM pathway of Photosynthesis.  $2+1+2=5$
5. What is Glycogenin? What is Thermogenin? What is brown fat? Why it is called brown fat? What is the action of oligomycin?  $1+1+1+1+1=5$

*Santanu Mukherjee*  
20/2/19