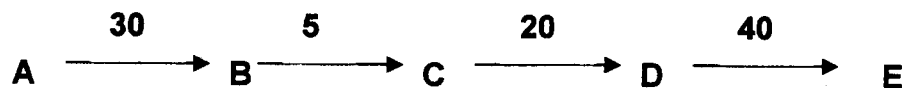


本試題是否可以使用計算機: 可使用, 不可使用 (請命題老師勾選)

1. If a protein contains 100 amino acids, how many nucleotides will be present in the gene that codes for this protein? (20%)
2. Given the following solutions, which has the lowest water concentration? Which two have the same osmolarity? (20%)

Solution	Concentration, mM			
	Glucose	Urea	NaCl	CaCl ₂
A	20	30	150	10
B	10	100	20	50
C	100	200	10	20
D	30	10	60	100

3. In the following metabolic pathway, what is the rate of formation of the end product E if substrate A is present at a saturating concentration? The maximal rates (products formed per second) of the individual steps are indicated. (20%)



4. Why will inhibition of ATP synthesis by a cell lead eventually to a decrease and, ultimately, cessation in secondary active transport? (20%)
5. Why do certain forms of liver disease produce an increase in the blood levels of ammonia? (20%)