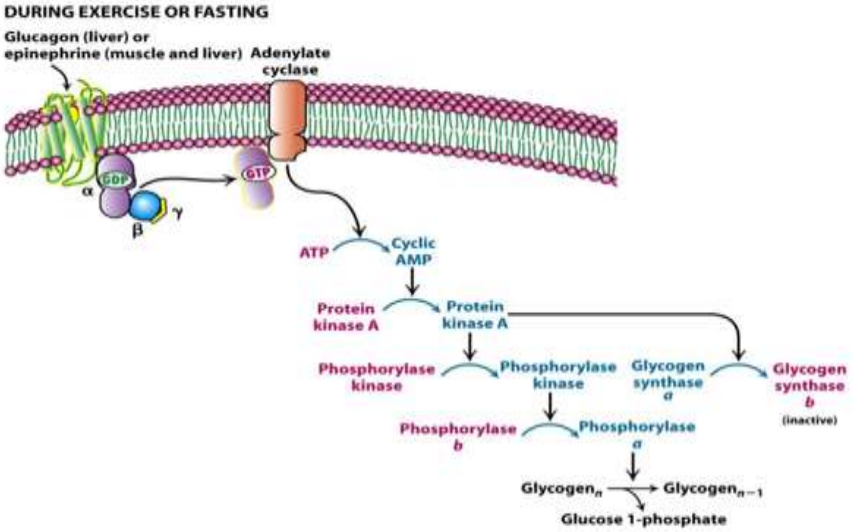
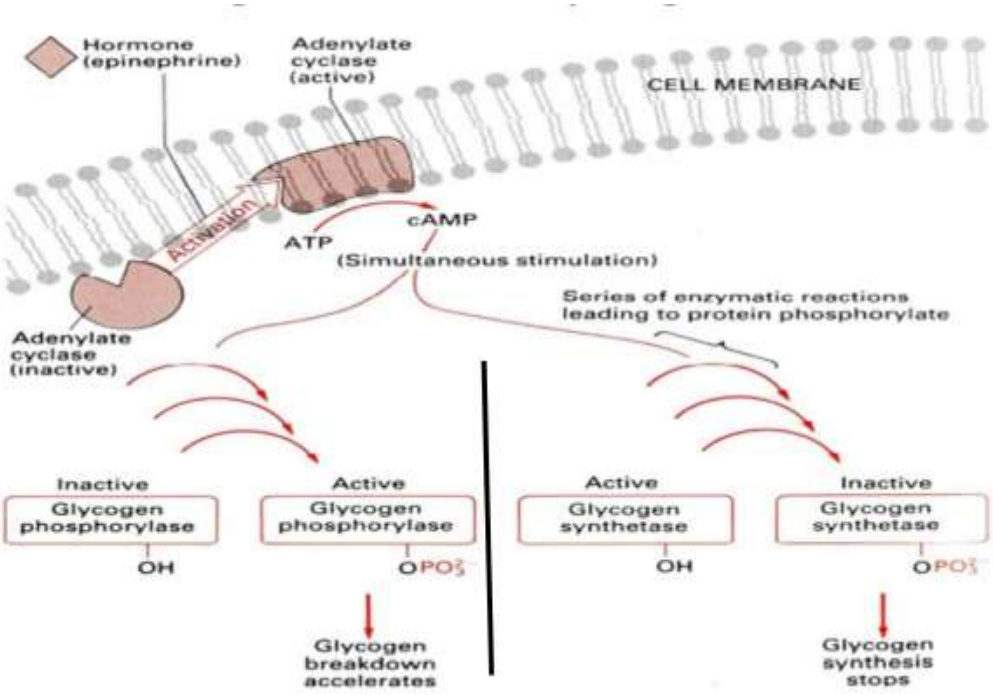
A. Question

-These images provide detailed informations on the hormonal signaling pathway that controls the breakdown of glycogen (glycogenolysis) during exercise or fasting.

Talk about the main informations acquired from these diagrams?





B. QCM

QCM1. We are studying the catabolism of hepatic glycogen. In the absence of glucose 6-phosphatase, glycogenolysis is complete.

A- Only one enzymatic activity is involved.

B- Blood glucose is released.

C- Blood glucose is not released.

D- Glucose-1-P is produced.

E- Unphosphorylated glucose is produced.

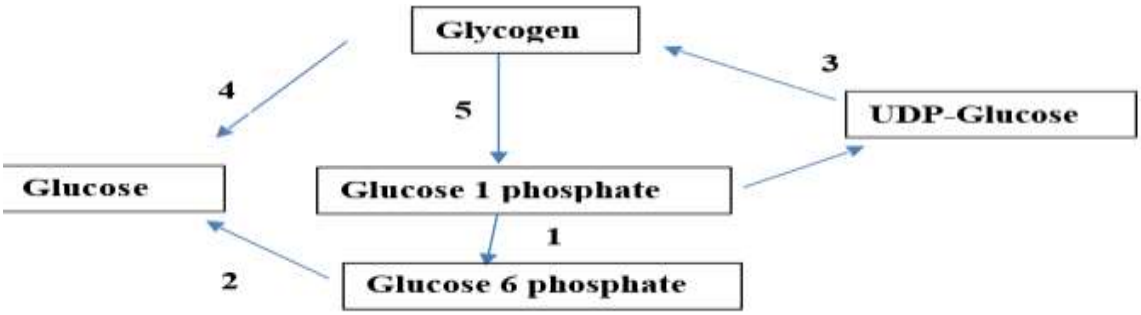
QCM2. Glycogenin

A- Is necessary to initiate glycogen polymerization.

B- Binds a maximum of 8 glucose residues through the action of glycogen synthase.

C- Reacts with UTP-glucose.

QCM3. Consider the following diagram relating to hepatic glycogen metabolism. Identify the correct labels for the enzymes involved in this metabolism.



A-1= Phosphoglucomutase

B-2=Glucose-6-phosphatase

C-3= Uridyl transferase

D-4= α-1,6 -glucosidase

E-5=Glycogen synthetase

QCM4.Regarding the regulation of glycogen metabolism

A- Phosphorylase kinase-b is inactive in its unphosphorylated form.

B- Glycogen phosphorylase-b is inactive in its unphosphorylated form.

C- Phosphoprotein phosphatase is active in its unphosphorylated form.

D- Glycogen synthetase is inactive in its phosphorylated form.

E- Phosphoprotein phosphatase inhibitor is active in its phosphorylated form.

QCM5. Glucagon

A- Has a hypoglycemic effect.

B- Binds to a cytosolic receptor.

C- Decreases AMPC production.

D- Stimulates the formation of glycogen synthetase.

E- Stimulates the formation of glycogen phosphorylase.