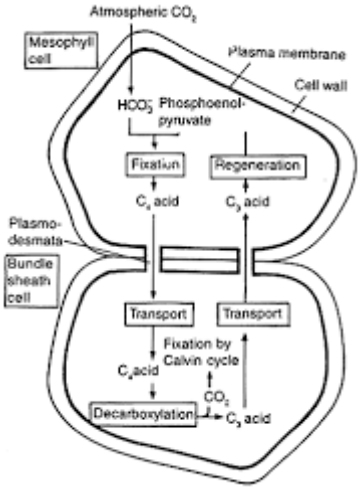
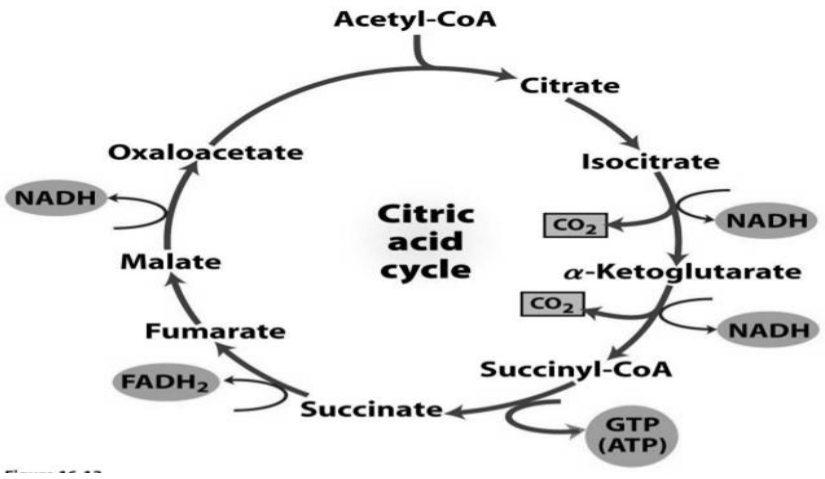
CLASS:XI	**INDIAN SCHOOL MUSCAT** **SECOND PERIODIC TEST**	SUBJECT: BIOLOGY
	SET - B	
QP.NO.	VALUE POINTS	SPLIT UP MARKS
1.	It is in the inner mitochondrial membrane space.	1
2.	Though Respiratory pathway is mainly a catabolic pathway, but it also involves anabolic pathway where respiratory intermediates are synthesized from fatty acids, glycerol or amino acids.	1
3.	Water	1
4.	Blue and Red	1
5.	Glycolysis is the stepped process in which 6 C Glucose breaks into two molecules of 3C Pyruvic acid. It takes place in the cytoplasm and the two monosaccharides are Glucose and Fructose.	1+1
6.	Pyruvic Acid +CoA+NAD^+ $\xrightarrow{Mg+2\ \text{Pyruvate dehydrogenase}}$ Acetyl Co A + CO_2 + NADH + H^+	Acetyl Co A (1/2) CO_2 (1/2) $NADH_2$ (½) Pyruvate Dehydrogenase (1/2)
7.	In C3 plants the first stable compound is Phoshoglyceric acid(PGA) but in C4 plants it is Oxalo acetic acid(OAA) . In C3 plants the Co2 acceptor is RuBP in mesophyll cells In C4 plants it is Phosphoenol pyruvate(PEP) in mesophyll cells and RuBP in bundle sheath cells.	1+1
8.	RuBisCo is the most abundant enzyme and is characterized by the fact that its active site can bind to both CO_2 & O_2. It has greater affinity for CO2 . In C3 plants RubisCo binds to O_2 and reduces CO_2 fixation. In C4 plants it does not occur as they have a mechanism to increase the concentration of CO 2 at the enzyme site.	1+1
9.	Splitting of water is associated with the PSII ,water splits into H^+, O and electrons .This creates oxygen and electrons that were removed from PSI get replaced. $2H_2O \longrightarrow 4\ H^+ + O_2 + 4\ e^-$	2
10.	The primary CO2 acceptor is Phosphoenol Pyruvate that is present in mesophyll cells of C4 plants. Phosphoenol Pyruvate carboxylase is helps to	

	convert it into a 4C molecule Oxalo acetic acid.It then forms malic or aspartic acid in mesophyll cells and it is then transported to bundle sheath cells.In these bundle sheath cells these acids are broken to a 3C molecule and and CO2 is released. The CO2 released enters the C3 cycle as bundle sheath cells have RuBisCO.This 3 C molecule is transported back to mesophyll cells and converted to PEP again.  	3
11.	TCA cycle or Citric acid cycle begins with condensation of Acetyl CoA and Oxalo Acetic acid catalysed by citrate synthase forming Citric Acid. Citrate is the isomerised to Isocitrate. Then decarboxylation leads to formation of α ketoglutaric acid releasing one $NADH_2$ and CO_2 and then Succinyl Co A. is formed again releasing $NADH_2$ and CO_2 This is then converts to Succinic acid and a molecule of GTP is formed. The succinic acid is then converted to Malic acid releasing $FADH_2$ and finally back to Oxaloacetic acid .  	3