PSG COLLEGE OF *ARTS &* SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION JUNE 2018
(Second Semester)

Branch **BIOTECHNOLOGY**

METABOLIC REGULATION

1 ime: Three Hours Maximum: 75 Marks

Answer ALL questions
ALL questions earn EQUAL marks (2 ⁴ 5+ 8^-15)

1 a Calmodulin kinases and their role

b How does cAMP regulate metabolic events in a cell?

c Account on how hormones play a pivotal role in regulating metabolism. You may take insulin as an example.

OR

d How many ATP molecules are produced after aerobic hydrolysis of one molecule of glucose[9]

e Explain feedback inhibition with examples,

f Discuss the stochiometry of ATP production by glycolysis.

2 a Mention the rate limiting the steps in glycolysis.

b Discuss the reciprocal regulation of gluconeogcncsis.

e 1 low is glycolysis regulated?

OR

d What do you mean -by anaplcrotic reactions?

e How is glycogen metabolism regulated?

f Elaborate on Hormonal regulation of Carbohydrate metabolism.

3 a What is meant by De novo lipogenesis?

b Explain lipogenesis of palmtic acid.

c Discuss the role of acetyl co A carboxylase in fatty acid metabolism.

OR

d What is Ketogenesis?

e Discuss Cholesterol biosynthesis.

f How is beta oxidation of fatty acids regulated.

Cont...

4 a IIow does trypsin act on protein?

b Explain oxidative Deamination reaction with examples.

c Sketch and explain regulation of urea cycle.

OR

d What are purines and pyrimidines?

e Discuss the salvage pathway of pyrimidine metabolism,

f How are purines synthesized dc novo?

5 a What is the central role ofliver in metabolism?

b Elaborate on the events that occur during starvation?

c What happens to the metabolism in diabetes?

OR

d What is the need for compartmentalization in metabolism?

e Discuss the metabolic profiles in Kidney,

f Role of ethanol in energy metabolism in liver.

Z-Z-Z **END**