

- (12) 9. For each of the following metabolic diseases, identify the **missing or defective enzyme** and the **product accumulated** (name or structure).
- (a) Alkaptonuria

 - (b) Lesch Nyhan Syndrome

 - (c) Phenylketonuria

 - (d) Hyperammonemia
- (6) 10. Explain the regulation of ribonucleotide reductase. dATP has two kinds of regulatory effects on this enzyme. Explain them.
- (8) 11. Pyrimidine biosynthesis is regulated by "end product feedback inhibition" in both bacteria and animals. However, the site of enzyme regulation is different in the two cases, and the allosteric effectors (activators and inhibitors) are also different. Describe the differences by filling in the following table.

Organism	Regulated Enzyme	Allosteric activator(s)	Allosteric inhibitor(s)
bacteria			
animal			