Q.P. Code: 18HS0803 **R18**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech II Year I Semester Regular Examinations Nov/Dec 2019

BIOLOGY FOR ENGINEERS

(Common to EEE, CE, AGE & ME)

Time: 3 hours Max. Marks: 60

PART-A

(Answer all the Questions **5 x 2 = 10** Marks)

1	**a**	Define Autotrophs and Heterotrophs.	**2M**
	b	Write down the phenotype ratio of Mendel's monohybrid and di-hybrid cross.	**2M**
	c	What are oligosaccharides? Give two examples for it.	**2M**
	d	Show the examples for purines and pyrimidines nitrogenous bases.	**2M**
	e	Give difference between aerobic and anaerobic respiration with examples.	**2M**

PART-B

(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

2	**a**	How living organisms are classified based on the carbon and energy resources.	**5M**
	b	Distinguish between Prokaryotes and Eukaryotes.	**5M**
		OR	
3		Illustrate in detail about the concept of taxonomic hierarchy.	**10M**

UNIT-II

4		Explain the concept of segregation and independent assortment with monohybrid and dihybrid cross with the help of Punnett square.	**10M**
		OR	
5	**a**	Describe how color blindness is passed on to children.	**5M**
	b	Discuss the mechanism and genetics behind Hemophilia.	**5M**

UNIT-III

6	**a**	List out the factors affecting the rate of enzyme reaction with neat diagrams.	**5M**
	b	Outline the mechanism of enzyme action with suitable diagrams.	**5M**
		OR	
7	**a**	Classify the proteins.	**6M**
	b	Summarize the types of RNA and its functions in cells.	**4M**

UNIT-IV

8	**a**	Demonstrate the structure and functions of DNA.	**6M**
	b	Compare primary, secondary, tertiary and quaternary structure of proteins.	**4M**
		OR	
9	**a**	Give the characteristics of genetic codon, why the code is universal.	**5M**
	b	Define Nucleosomes. Illustrate the structure of nucleosomes.	**5M**

UNIT-V

10	**a**	Interpret the mechanisms of ATP production.	**5M**
	b	Write a note on microscopy.	**5M**
		OR	
11	**a**	Summarize the methods of sterilization and its techniques.	**5M**
	b	What is photosynthesis? Summarize the process of light dependent reaction of photosynthesis.	**5M**

END