Q. Code: 278086

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

B.E. / B.TECH. DEGREE EXAMINATIONS, DEC 2019

Sixth Semester

IT16002 – DATA SCIENCE USING PYTHON

(Information Technology)

(Regulation 2016)

Time: Three Hours **Maximum : 100 Marks**

Answer **ALL** questions

PART A - (10 X 2 = 20 Marks)

		CO	RBT
1.	Define Data Science. List its applications.	1	U
2.	State the use of zip function in python.	1	U
3.	Define correlation with an example.	3	R
4.	Define conditional probability.	3	R
5.	What is cleaning and munging of data?	2	U
6.	What is correlation matrix?	2	U
7.	What is Machine learning?	4	U
8.	What is bias- variance trade off?	4	U
9.	Define least squares model in linear regression.	5	R
10.	What are random forests? Give an example.	5	U

PART B - (5 X16 = 80 Marks)

11.	(a)	Discuss in detail the matplotlib package in python and discuss the various kinds of visualization charts with python code.	(16)	3	U
		(OR)			
	(b)	Explain in detail the various types of sequences (containers) in python.	(16)	3	U
12.	(a) (i)	Discuss in detail about the central dependencies and dispersion of data.	(8)	1	U
	(ii)	Write short notes on Correlation. Differentiate correlation and causation.	(8)	1	U

(OR)

	(b)	(i)	Discuss in detail on Normal distribution and Central limit theorem. Perform simulation using python.	**(8)**	**1**	**AP**
		(ii)	Brief on correlation and Simpson's paradox with an example.	**(8)**	**1**	**AP**
13.	(a)	(i)	Explain in detail about web scraping. Demonstrate with suitable python code.	**(16)**	**2**	**AP**
		(ii)	Write a python program to read, write and manipulate data from delimited text files using csv reader module.	**(16)**	**2**	**AP**

(OR)

	(b)		Explain in detail about authenticated API's. Illustrate the process of getting credentials and accessing services using python.	**(16)**	**2**	**AP**
14.	(a)		Explain in detail about logistic regression with an appropriate case study and relevant python code.	**(16)**	**4**	**AP**

(OR)

	(b)		Explain about K- Nearest Neighbors model. Write a python program to implement a prediction model using K- Nearest Neighbors model.	**(16)**	**4**	**AP**
15.	(a)		Discuss in detail about Neural networks. Illustrate the training of feed forward neural network with relevant python code.	**(16)**	**5**	**AP**

(OR)

	(b)		Explain in detail about Decision trees with a suitable case study and relevant python code.	**(16)**	**5**	**AP**