

Question Paper

**MANIPAL UNIVERSITY**

**SCHOOL OF INFORMATION SCIENCES (SOIS)
SECOND SEMESTER MASTER OF ENGINEERING - ME (COMPUTING
TECHNOLOGIES AND VIRTUALIZATION)
DEGREE EXAMINATION - APRIL 2017**

Wednesday, 26, 2017

Time : 10:00 AM - 1:00 PM

Big Data and Data Visualization [VIR 620]

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) What are the different categories of Big Data? Explain how they are handled. (5+5) (10)
- 2) What is Data Analysis? Explain the various phases of Data Analysis. (2+8) (10)
- 3) What are the challenges faced in Real Time Data Processing? Explain. (10)
- 4) Explain these terms with an example with respect to Statistics. (2.5X4) (10)
a. Mean **b.** Median **c.** Mode
d. Standard Deviation
- 5) What are the solutions proposed to address Big Data security and privacy challenges? (10)
- 6) What is MapReduce? Briefly explain the three stage execution of MapReduce program. (10)
- 7) Briefly explain the HDFS architecture with its elements using a block diagram. (10)
- 8) What is an HBase shell and how to start and stop the interactive HBase shell? (10)
- 9) Explain these terms with respect to Machine Learning applications. (2.5X4) (10)
a. Association Rule **b.** Classification
c. Pattern Recognition **d.**

Knowledge Extraction

10)

What is Data Visualization? Write a note on the common Data types and Data Relationships. (10)
(2+8)