# Indian Institute of Information Technology Dharwad
*Midterm Examination*

**Course**: Data and Business Analytics                **Code**: DS201

**Max Marks**:    50                **Duration**: 60 Min

- **Answer all questions, submit the handwritten answer scripts in google classroom.**

1. What do you understand by Business Intelligence? What is the need for it?                (5)

2. How an organization can retain its organizational structure and successfully align with BA team? (5)

3. Show how standard deviation is used in at least two different metrics/ratios in financial data analytics with regard to risk and returns on investment. Compare the two with a focus on how to interpret the chosen metrics/ratios.                (5)

4. Illustrate how business analytics helps in decision making by giving a real or realistic example of how analytics helped in making the right decision.                (5)

5. Illustrate how business analytics helps in getting better insights into the business by giving a real or realistic example of how analytics led to better understanding of some business phenomenon.                (5)

6. Suppose you are given data about toll collection on highways (in Rs crores per day) and rainfall amounts (mm per day). What analytics will you carry out on these two data sets together? What will you plot? Why?                (10)

7. Explain this R code and show what kind of plot you expect to see:

```
x <— rnorm(1000)
y <— rnorm(1000)
y <— y + x
plot(y ~ x)
m <— lm(y ~ x)
abline(m)
```
                (5)

9. (a) What is a Box-and-Whisker plot? What all does it show?

    (b) Draw an approximate Box-and-Whisker plot for the following data:

    1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 50, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

    (c) What is the IQR for this data set?                (10)