

Indian Institute of Technology
Mid-Autumn Semester Examination 2018-2019

Subject Name: **Statistics for Economics**
Time: **2 hours**
2nd Year MSc. Int. in Economics

Subject No. **HS20003**
Full Marks: **30**
No of Students: **53**

Answer all the Questions
(No queries will be entertained during examination)

1. What is all about statistics? Explain the significance of statistics for business and economics. **(Mark: 2+2=4)**.
2. "Statistics begs information, but information begets knowledge". Justify it in the field of business and economic real world applications **(Mark: 3)**.
3. What is the case for standard deviation (S.D.) if the variable assumes the constant value? Prove this with a numerical example **(Mark: 2+2=4)**.
4. The mean of 5 observations is 4.4 and the variance is 8.24. If three of the five observations are 1, 2 and 6, find out the values of other two missing observations **(Mark: 4)**.
5. The outsourcing workers on the job of the same company show the following results over a long period of time. **(Mark: 2.5+2.5=5)**

Parameters	Worker A	Worker B
Average	30	25
Variance	6	4

- a) Which worker appears to be more consistent in the time he requires to complete the job?
- b) Which worker appears to be faster in completing the job?
6. What are the values of skewness and kurtosis when the mode of the distribution is ill-defined? Calculate this with your own produced example. **(Mark: 1+1=2)**.
7. Discuss the following with at least one example: **(Mark: 2+2+2=6)**
 - a. Time series data vs. panel data
 - b. Qualitative data vs. quantitative data
 - c. Systematic sampling vs. stratified random sampling
8. Prove that the value of Karl Pearson's coefficient of correlation (r) ranges between -1 to +1. **(Mark: 2)**.

