

STATISTICS SEM – I IMPORTANT QUESTIONS

UNIT – 1

- 1. Define measures of central tendency ? And Explain various measures with merits , demerits ?**
- 2. Define measures of dispersion ? And Explain various measures with merits , demerits ?**
- 3. Define moments ? And derive relationship between central and Non-central moments ?**
- 4. Explain the concept of Skewness ?**
- 5. Explain the concept of kurtosis ?**
- 6. Explain how descriptive statistics are used in image analysis ?**
- 7. Explain how descriptive statistics are used in pattern recognition?**
- 8. All problems regarding mean , median ,mode ,GM ,HM ,range ,QD ,MD ,standard deviation ?**

UNIT- 2

- 1. Define Experiment, mutually exclusive events , exhaustive events , equally likely events ?**
- 2. Define various definitions of probability i) Mathematical ii) Statistical iii) Axiomatic probability.**
- 3. State and prove addition theorem for i) two events ii) ' n ' events .**
- 4. State and prove multiplication theorem for i) two events ii) ' n ' events .**
- 5. State and prove Baye's theorem .**
- 6. State and prove Booles inequality .**

7. Define conditional probability and independence of events ?
8. All problems regarding all theorems ?

UNIT – 3

1. Define Random variable ? and discrete , continuous random variables with examples .
2. Define Distribution function ? State and prove its properties ?
3. All problems based on discrete and continuous random variables ?
4. Define Bi-variate random variables ? and also Explain the concepts of Joint , Marginal and conditional functions ?
5. All Problems regarding bivariate random variables ?
6. Explain the concept of Jacobian transformation ?

UNIT – 4

1. Define Mathematical Expectation ?
2. State and prove addition theorem of Expectations ?
3. State and prove multiplication theorem of Expectations?
4. Show that i) $E(ax) = aE(x)$ ii) $E(ax+by) = a E(x) + b E(y)$.
5. Show that i) $V(ax) = a^2 V(x)$ ii) $V(ax+b) = a^2V(x)$.
6. Define MGF and state and prove its properties ?
7. Define CGF and state and prove its properties ?
8. Define CHF and state and prove its properties ?
9. Define PGF and state and prove its properties ?

- 10. State and prove Cauchy – Schwartz's inequality ?**
- 11. State and prove Chebyshev's inequality ?**