P131/CMP504/EE/20180603

Time : 3 Hours **Marks : 80**

Instructions :

1. All Questions are Compulsory.
2. Each Sub-question carry 5 marks.
3. Each Sub-question should be answered between 75 to 100 words. Write every questions answer on separate page.
4. Question paper of 80 Marks, it will be converted in to your programme structure marks.

---

1. Solve any **four** sub-questions.
   a) Write scope and importance of statistics. 5
   b) Define Harmonic mean write merits and demerits of H.M. 5
   c) Explain Range. 5
   d) During annual social gathering personality competition was conducted is an undergraduate two judges A and B awarded scores to 15 competitions in a personality test. These scores X and Y are given by find Rs 5

Judge A: X	30	40	40	50	60	80	60	50	30	70	60	50	90	30	50
Judge B: Y	32	35	37	38	42	50	43	35	30	40	39	36	52	28	28

   e) Give some examples of random experiment. 5

2. Solve any **four** sub-questions.
   a) Explain comment on concept of Independence. 5
   b) Give examples of a discrete random variable. 5
   c) Write a note on students t-distribution. 5
   d) What is the test for specified population proportion. 5
   e) Describe a test of an hypothesis concerning specified cell probabilities. 5

3. Solve any **four** sub-questions.
   a) A manager Claims that the average yield of a product is 1000 metric tons per day the sample based upon 50 observations yielded sample mean = 991 and s=20 tons can you support manager's claim? 5
   b) What is the meaning of uniform distribution. 5
   c) Define terms 5
      i) Mean (μ) and variance (σ^2)
      ii) Median and mode
   d) Explain combination and permutation 5
   d) Show that 5
      i) P (A) + P (A^c) = 1
      ii) IF AC B then P(A) $\leq$ P (B)

4. Solve any **four** sub-questions.

a) Define Null and alternative hypothesis. 5

b) What are the features of normal distribution. 5

c) Write down properties of CDF (discrete random variable) 5

d) Explain the term weighted Arithmetic mean. 5

e) What are applications of correlation in various fields. 5