AJEENKYA
D Y PATIL UNIVERSITY

End Term Examination (December 2019)

School: School of Engineering **Program: BCA (DS)**

Course: Statistical Science I **Course Code: CSC 248**

Semester: III **Max Marks: 30** **Duration (Mins):** 60 Min

Note- 1.Figures to the right indicates full marks
2. Attempt any three questions.

Q1) a) The data on wages at two places is given below. Test whether there is significant difference in (i) mean wages and (ii) Standard deviations (take $Z_{0.05}$= 1.96) **(05)**

	Mean Wages	Standard Deviation	Number of workers
Place A	49	29	980
Place B	51	41	1480

b An urn contains 04 balls. Two balls are drawn at random and are found to be white. What is the probability that all the balls are white? **(05)**

Q2) a) Five defective bulbs are accidently mixed with twenty good ones. Find the probability distribution of the number of defective bulbs if four bulbs are drawn at random from this lot **(05)**

b) Represent the following distribution graphically by histogram, frequency polygon and frequency curve **(05)**

X	10-20	20-30	30-40	40-50	50-60	60-70	70-80
f	15	30	35	65	45	25	20

Q3) a) Test the following data on sampling for **(06)**
(1) Equality of population means
(2) Equality of population variances

Sample	Size	Mean	Sum of square deviations from mean
1	10	12	120
2	12	15	314
Take $t_{0.05}$ = 2.086, $F_{0.05}$= 3.10			

b) The probability that a contractor will get a plumbing contract is 2/3 and the probability that he will not get an electric contract is 5/9. If the probability of getting at least one contract is 4/5 find the probability that he will get both the contracts **(04)**

Q4) a) Determine mean , median and mode for the following frequency distribution **(06)**

x	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
f	5	4	8	12	16	15	10	8	5	2

b) A random variable has following probability distribution find the mean and variance of the distribution **(04)**

x	4	5	6	8
p	0.1	0.3	0.4	0.2

Q5) a) Determine the coefficient of variation of the following **(05)**

X	f	X	f	X	f
15-20	2	35-40	15	55-60	16
20-25	5	40-45	20	60-65	13
25-30	8	45-50	20	65-70	11
30-35	11	50-55	17	70-75	5

b) A random variable has following probability function. **(05)**

i. Find the value of k
ii. Evaluate $P(3 \leq X \leq 6)$
iii. Find $P(X \geq 6)$

x	0	1	2	3	4	5	6	7
p	0	k	2k	2k	3k	k^2	$2k^2$	$7k^2+k$

*******ALL THE BEST*******