Nagarjuna Degree College
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Reg. No.

34331

III Semester B.Com. (Hons) Degree Examination, March/April - 2022

COMMERCE

Statistical Applications in Business Decissions-II

(CBCS Scheme Freshers)

Paper: 3.2

Time : 3 Hours   Maximum Marks : 70

Instructions to Candidates: Answers should be written in English only.

PART - A

Answer any five questions. Each question carries 2 marks.   (5×2=10)

1. a) What do you mean by correlation?

    b) What do you mean by seasonal variations?

    c) Define sample space.

    d) Determine the probability when at least one head appears in two tosses of a coin.

    e) Write any two properties of Normal distribution.

    f) Define sample.

    g) What do you mean by sampling distribution?

PART - B

Answer any three questions. Each question carries five marks.   (3×5=15)

2. From the following data, obtain the two regression equations.

	Advertisement expenses (Rs. in crores)	Sales (Rs. in crores)
Mean	20	100
S.D.	05	12

Coefficient of correlation = 0.8

3. Calculate five yearly moving averages from the following data & Comment on the results.

Year:	2010	2011	2012	2013	2014	2015
Value:	500	540	550	530	520	560

Year:	2016	2017	2018	2019	2020
Value:	600	640	620	610	640

[P.T.O.

4. From a standard pack of cards, a card is drawn at random. What is the probability that the card is

   i) A Diamond or a club?

   ii) A king or a queen?

5. The Monthly income of 1000 employees are normally distributed around a mean of Rs. 7000 & with a standard deviation of Rs. 500. Estimate the number of employee whose monthly income will be

   i) More than Rs. 7500

   ii) Less than Rs. 6300

   [Area between z=0 & z= 1 = 0.3413; Area between z = 0 & z = 1.4 = 0.4192]

PART - C

Answer any three questions. Each question carries 15 marks. (3×15=45)

6. Ten competitors in a beauty contest are ranked by three judges in the following order:

1st Judge:	1	6	5	10	3	2	4	9	7	8
2nd Judge:	3	5	8	4	7	10	2	1	6	9
3rd Judge:	6	4	9	8	1	2	3	10	5	7

   Determine which pair of judges has the nearest approach to common taste in beauty.

7. Below are given he figures of production (in thousand tons) of a sugar factory:

Year:	2009	2010	2011	2012	2013	2014	2015
Production	77	88	94	85	91	98	90

   i) Fit a straight-line trend by the method of least squares & show the trend values.

   ii) Estimate the value of production for the year 2018.

   iii) Plot the actual & Trend values on the graph.

8. Fit a Poisson distribution for the following data and find the expected frequencies. Also compute mean and variance for the fitted distribution. [$e^{-0.99} = 0.3716$]

No.of mistakes/page	0	1	2	3	4	5	6
No. of printed pages:	48	27	12	7	4	1	1

9. i) distinguish between census and sampling technique.

   ii) It is known that population standard deviation of waiting time of new gas connection in a particular town is 25 days. How large a sample should be chosen with an allowable error of 6 days of the true average waiting time at 95% confidence level? [Z at 95% confidence level = 1.96]