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JK Lakshmi Pat University, Jaipur
INSTITUTE OF MANAGEMENT
 End Term Examination, May 2026
 BBA Semester II, 2025-26

ID1114: BUSINESS STATISTICS

Time: 2.0 Hours

Max. Marks: 30

Instructions to Students:

1. All questions are compulsory. All parts of a question must be attempted at one place and in order.
2. Use of non-scientific calculators is allowed.

- Q.1 Answer the following questions in one or two sentences: 6
- a) Under what situation would the median be a more appropriate measure than the mean to represent students' performance in an examination? (CO3)
 - b) Dataset A has a higher standard deviation than Dataset B. What does this indicate about their variability? Can a conclusion be drawn directly?
 - c) If the correlation between advertising spends and sales is 0.85, what does this imply about their relationship?
 - d) Two fair coins are tossed. State the probability of obtaining at least one head.
 - e) Why is sampling often preferred over census in business decision-making?

- Q.2 a) Weekly sales of a company (in ₹ lakhs) were recorded as under: 6
- 12, 15, 18, 22, 25, 30, 35. (CO2)
- Compute mean, median, and standard deviation for the above data.
- b) A firm collected data on training hours and employee productivity as under. Calculate Pearson's correlation coefficient and interpret it.

Employee	Training Hours	Productivity Score
A	2	50
B	4	55
C	6	65
D	8	70
E	10	75

- Q.3 a) A call center observes that 20% of calls result in a sale. Compute the probability that out of 5 calls, exactly 2 result in sales. Determine the expected number of successful sales in 5 calls. 6
- (CO2)
- b) A sample of 36 customers has an average monthly spending of ₹2400 with a standard deviation of ₹600. Construct a 95% confidence interval for the population mean and interpret the result.
- Q.4 A company wants to predict sales based on advertising expenditure. Past data indicated the following: 6
- (CO1)

Advertising (₹ '000)	Sales (₹ '000)
10	40
20	50
30	65
40	70
50	80

- Estimate the simple linear regression equation from the above data.
- Using the estimated model, predict the sales when advertising expenses are ₹ 35000.
- Interpret the slope coefficient in the business context.

Q.5 A market researcher conducted a study to examine whether gender and brand preference are related. Following data was collected: 6
(CO1)

	Brand A	Brand B	Total
Male	40	20	60
Female	30	50	80
Total	70	70	140

- Perform a Chi-square test of association at 5% significance level.
- Interpret the results in a marketing decision context.

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Chi-Square Distribution Table

DF	0.995	0.975	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.05	0.025	0.01	0.005	0.001	0.0001
1	0.0004	0.0008	0.0016	0.0024	0.0032	0.0040	0.0048	0.0056	0.0064	0.0072	0.0080	0.0089	0.0098	0.0106	0.0115	0.0125	0.0135
2	0.0100	0.0150	0.0200	0.0250	0.0300	0.0350	0.0400	0.0450	0.0500	0.0550	0.0600	0.0650	0.0700	0.0750	0.0800	0.0850	0.0900
3	0.0717	0.1013	0.1312	0.1614	0.1915	0.2217	0.2519	0.2821	0.3123	0.3425	0.3727	0.4029	0.4331	0.4633	0.4935	0.5237	0.5539
4	0.207	0.2537	0.3005	0.3473	0.3941	0.4409	0.4877	0.5345	0.5813	0.6281	0.6749	0.7217	0.7685	0.8153	0.8621	0.9089	0.9557
5	0.412	0.4755	0.5390	0.6025	0.6660	0.7295	0.7930	0.8565	0.9200	0.9835	1.0470	1.1105	1.1740	1.2375	1.3010	1.3645	1.4280
6	0.676	0.7501	0.8242	0.8983	0.9724	1.0465	1.1206	1.1947	1.2688	1.3429	1.4170	1.4911	1.5652	1.6393	1.7134	1.7875	1.8616
7	0.989	1.0703	1.1516	1.2329	1.3142	1.3955	1.4768	1.5581	1.6394	1.7207	1.8020	1.8833	1.9646	2.0459	2.1272	2.2085	2.2898
8	1.344	1.4315	1.5186	1.6057	1.6928	1.7799	1.8670	1.9541	2.0412	2.1283	2.2154	2.3025	2.3896	2.4767	2.5638	2.6509	2.7380
9	1.735	1.8286	1.9217	2.0148	2.1079	2.2010	2.2941	2.3872	2.4803	2.5734	2.6665	2.7596	2.8527	2.9458	3.0389	3.1320	3.2251
10	2.156	2.2547	2.3528	2.4509	2.5490	2.6471	2.7452	2.8433	2.9414	3.0395	3.1376	3.2357	3.3338	3.4319	3.5300	3.6281	3.7262
11	2.603	2.7061	2.8090	2.9119	3.0148	3.1177	3.2206	3.3235	3.4264	3.5293	3.6322	3.7351	3.8380	3.9409	4.0438	4.1467	4.2496
12	3.074	3.1815	3.2886	3.3957	3.5028	3.6099	3.7170	3.8241	3.9312	4.0383	4.1454	4.2525	4.3596	4.4667	4.5738	4.6809	4.7880
13	3.565	3.6766	3.7837	3.8908	3.9979	4.1050	4.2121	4.3192	4.4263	4.5334	4.6405	4.7476	4.8547	4.9618	5.0689	5.1760	5.2831
14	4.075	4.1906	4.3017	4.4078	4.5139	4.6200	4.7261	4.8322	4.9383	5.0444	5.1505	5.2566	5.3627	5.4688	5.5749	5.6810	5.7871
15	4.601	4.7201	4.8352	4.9453	5.0554	5.1655	5.2756	5.3857	5.4958	5.6059	5.7160	5.8261	5.9362	6.0463	6.1564	6.2665	6.3766
16	5.142	5.2651	5.3822	5.4993	5.6164	5.7335	5.8506	5.9677	6.0848	6.2019	6.3190	6.4361	6.5532	6.6703	6.7874	6.9045	7.0216
17	5.697	5.8236	5.9447	6.0658	6.1869	6.3080	6.4291	6.5502	6.6713	6.7924	6.9135	7.0346	7.1557	7.2768	7.3979	7.5190	7.6401
18	6.265	6.3954	6.5165	6.6376	6.7587	6.8798	6.9999	7.1200	7.2401	7.3602	7.4803	7.6004	7.7205	7.8406	7.9607	8.0808	8.2009
19	6.844	6.9783	7.1034	7.2285	7.3536	7.4787	7.6038	7.7289	7.8540	7.9791	8.1042	8.2293	8.3544	8.4795	8.6046	8.7297	8.8548
20	7.434	7.5713	7.7004	7.8295	7.9586	8.0877	8.2168	8.3459	8.4750	8.6041	8.7332	8.8623	8.9914	9.1205	9.2496	9.3787	9.5078