UNAM

FACULTY	Commerce, Management and Law		
DEPARTMENT	School of Accounting		
SUBJECT	Business Statistics A		
SUBJECT CODE	ABA 3691		
DATE	June 2026		
DURATION	**3 Hours**	**MARKS**	100

FIRST OPPORTUNITY EXAMINATION

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This question paper consists of 5 pages, including this cover page and annexes.

Instructions:

1. **Answer all questions**
2. **Start each question on a new page**
3. **Show all steps in your calculations**
4. **Full marks will be awarded only for correct and well-explained answers.**
5. **Round answers to two decimal places where needed**
6. **Use only the attached tables and formula sheet**
7. **The use of a scientific calculator is allowed**

UNIVERSITY OF NAMIBIA EXAMINATIONS

Question 1 [20 Marks]

a)

A sample of 10 time periods (in days) that elapsed between the taking and the delivery of an order at a company is listed below:

75	97	71	65	84	65	84	27	43	50

Find:

(i) First (Lower) Quartile (2)
(ii) Third (Upper) Quartile (2)
(iii) 85th Percentile (2)
(iv) Variance (5)
(v) Coefficient of Variation (CV) (5)

b)

Construct a stem and leaf display for the data below.

70	72	75	64	58	83	80	82	76	75	68	65	57	78	85	72

(4)

Question 2 [30 Marks]

The number of minutes a random sample of 64 patients had to wait to be served at the local health clinic was observed as follows:

Waiting time	Number of patients
0 – < 4	10
4 - < 8	17
8 - < 12	16
12 - < 16	14
16 - < 20	7

Calculate:

(i) Mean (5)
(ii) Median (5)
(iii) Mode (5)
(iv) Interquartile range (10)
(v) Standard deviation (5)

Question 3 **[25 Marks]**

a)

The job grades (A,B, C and D) of forty (40) clerical employees of ABC Company are as follows:

B	A	A	D	B	D	B	A	D	C
D	A	B	B	C	A	D	C	A	B
B	A	B	C	A	A	C	B	D	D
A	A	B	B	A	D	A	C	A	D

(i) Construct a frequency table of these job grades. (2)

(ii) Compute the percentage frequencies (2)

(iii) What percentages of employees are in job grade D? (2)

(iv) Draw a pie chart using percentage frequency. (4)

b)

A major department store has determined that its customers charge an average of N$ 500 per month, with a standard deviation of N$ 80. Assume the amounts of charges are normally distributed.

(i) What percentage of customers charge more than N$ 380 per month? (4)

(ii) What percentage of customers charge less than N$ 340 per month? (4)

(iii) What percentage of customers' charges are between N$ 644 and N$ 700 per month? (7)

Question 4 **[25 Marks]**

a)

A life insurance company has determined that each week, an average of seven claims is filed at its Windhoek branch.

(i) What is the probability that during the next week exactly seven claims will be filled? (2)

(ii) What is the probability that during the next week no claims will be filed? (3)

(iii) What is the probability that during the next week fewer than four claims will be filled? (7)

b)

A salesperson contacts eight potential customers per day. From experience, we know that the probability of a potential customer making a purchase is 0.10 (10%).

(i) What is the probability that the salesperson will make exactly two sales in a day?(2)

(ii) What is the probability that the salesperson will make at least two sales in a day?(7)

(iii) What percentage of days will the salesperson not make a sale? (2)

(iv) What is the expected number of sales per day? (2)

TOTAL:100

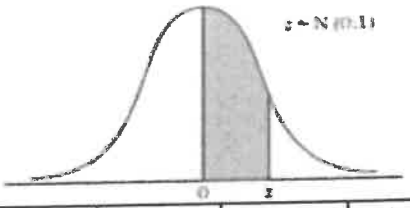
~THE END~

FORMULAE

MEASURES OF CENTRAL LOCATION	
Arithmetic mean	*Ungrouped data* $\bar{x} = \frac{\sum x_i}{n}$
	Grouped data $\bar{x} = \frac{\sum f_i x_i}{n}$
Mode	*Grouped data* $M_e = O_{mo} + \frac{c(f_m - f_{m-1})}{2f_m - f_{m-1} - f_{m+1}}$
Median	*Grouped data* $M_e = O_{me} + \frac{c\left(\frac{n}{2} - f(<)\right)}{f_{me}}$
Lower Quartile	*Grouped data* $Q_1 = O_{q1} + \frac{c\left(\frac{n}{4} - f(<)\right)}{f_{q1}}$
Upper Quartile	*Grouped data* $Q_3 = O_{q3} + \frac{c\left(\frac{3n}{4} - f(<)\right)}{f_{q3}}$
Quartile	*Ungrouped data* $Q_1 = n\left(\frac{25}{100}\right)$ & $Q_3 = n\left(\frac{75}{100}\right)$
Percentiles	*Grouped data* $P_i = O_{p_i} + \frac{c(\frac{i}{100}(n) - F_{p_i})}{f_{p_i}}$
Percentiles	*Ungrouped data* $P_i = n\left(\frac{i}{100}\right)$
MEASURES OF SPREAD	
Variance	*Ungrouped data* $s^2 = \frac{\sum(x_i - \bar{x})^2}{n-1}$
	Grouped data $s^2 = \frac{\sum f_i(M_i - \bar{x})^2}{n-1}$
Standard deviation	$s = \sqrt{s^2}$

Coefficient of variation	$CV = \frac{s}{\bar{x}}(100)$
PROBABILITY DISTRIBUTIONS	
Binomial distribution	$P(x) = \binom{n}{x} p^x (1-p)^{(n-x)}$ $\mu = np$ $\sigma = \sqrt{np(1-p)}$
Poisson distribution	$P(x) = \frac{a^x e^a}{x!}$ $\mu = a$ $\sigma = \sqrt{a}$
***z* scores for the standard normal Probability**	$z = \frac{x-\mu}{\sigma}$

The standard normal distribution (z)



This table gives the area under the standard normal curve between 0 and z

$P[0 < Z < z]$

z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.00000	0.00399	0.00798	0.01197	0.01595	0.01994	0.02392	0.0279	0.03188	0.03586
0.1	0.03983	0.0438	0.04776	0.05172	0.05567	0.05962	0.06356	0.06749	0.07142	0.07535
0.2	0.07926	0.08317	0.08706	0.09095	0.09483	0.09871	0.10257	0.10642	0.11026	0.11409
0.3	0.11791	0.12172	0.12552	0.1293	0.13307	0.13683	0.14058	0.14431	0.14803	0.15173
0.4	0.15542	0.1591	0.16276	0.1664	0.17003	0.17364	0.17724	0.18082	0.18439	0.18793
0.5	0.19146	0.19497	0.19847	0.20194	0.2054	0.20884	0.21226	0.21566	0.21904	0.2224
0.6	0.22575	0.22907	0.23237	0.23565	0.23891	0.24215	0.24537	0.24857	0.25175	0.2549
0.7	0.25804	0.26115	0.26424	0.2673	0.27035	0.27337	0.27637	0.27935	0.2823	0.28524
0.8	0.28814	0.29103	0.29389	0.29673	0.29955	0.30234	0.30511	0.30785	0.31057	0.31327
0.9	0.31594	0.31859	0.32121	0.32381	0.32639	0.32894	0.33147	0.33398	0.33646	0.33891
1.0	0.34134	0.34375	0.34614	0.34849	0.35083	0.35314	0.35543	0.35769	0.35993	0.36214
1.1	0.36433	0.3665	0.36864	0.37076	0.37286	0.37493	0.37698	0.3790	0.3810	0.38298
1.2	0.38493	0.38686	0.38877	0.39065	0.39251	0.39435	0.39617	0.39796	0.39973	0.40147
1.3	0.4032	0.4049	0.40658	0.40824	0.40988	0.41149	0.41309	0.41466	0.41621	0.41774
1.4	0.41924	0.42073	0.4222	0.42364	0.42507	0.42647	0.42785	0.42922	0.43056	0.43189
1.5	0.43319	0.43448	0.43574	0.43699	0.43822	0.43943	0.44062	0.44179	0.44295	0.44408
1.6	0.4452	0.4463	0.44738	0.44845	0.4495	0.45053	0.45154	0.45254	0.45352	0.45449
1.7	0.45543	0.45637	0.45728	0.45818	0.45907	0.45994	0.4608	0.46164	0.46246	0.46327
1.8	0.46407	0.46485	0.46562	0.46638	0.46712	0.46784	0.46856	0.46926	0.46995	0.47062
1.9	0.47128	0.47193	0.47257	0.4732	0.47381	0.47441	0.4750	0.47558	0.47615	0.4767
2.0	0.47725	0.47778	0.47831	0.47882	0.47932	0.47982	0.4803	0.48077	0.48124	0.48169
2.1	0.48214	0.48257	0.4830	0.48341	0.48382	0.48422	0.48461	0.4850	0.48537	0.48574
2.2	0.4861	0.48645	0.48679	0.48713	0.48745	0.48778	0.48809	0.4884	0.4887	0.48899
2.3	0.48928	0.48956	0.48983	0.4901	0.49036	0.49061	0.49086	0.49111	0.49134	0.49158
2.4	0.4918	0.49202	0.49224	0.49245	0.49266	0.49286	0.49305	0.49324	0.49343	0.49361
2.5	0.49379	0.49396	0.49413	0.4943	0.49446	0.49461	0.49477	0.49492	0.49506	0.4952
2.6	0.49534	0.49547	0.4956	0.49573	0.49585	0.49598	0.49609	0.49621	0.49632	0.49643
2.7	0.49653	0.49664	0.49674	0.49683	0.49693	0.49702	0.49711	0.4972	0.49728	0.49736
2.8	0.49744	0.49752	0.4976	0.49767	0.49774	0.49781	0.49788	0.49795	0.49801	0.49807
2.9	0.49813	0.49819	0.49825	0.49831	0.49836	0.49841	0.49846	0.49851	0.49856	0.49861
3.0	0.49865	0.49869	0.49874	0.49878	0.49882	0.49886	0.49889	0.49893	0.49896	0.499
3.1	0.49903	0.49906	0.4991	0.49913	0.49916	0.49918	0.49921	0.49924	0.49926	0.49929
3.2	0.49931	0.49934	0.49936	0.49938	0.4994	0.49942	0.49944	0.49946	0.49948	0.4995
3.3	0.49952	0.49953	0.49955	0.49957	0.49958	0.4996	0.49961	0.49962	0.49964	0.49965
3.4	0.49966	0.49968	0.49969	0.4997	0.49971	0.49972	0.49973	0.49974	0.49975	0.49976
3.5	0.49977	0.49978	0.49978	0.49979	0.4998	0.49981	0.49981	0.49982	0.49983	0.49983
3.6	0.49984	0.49985	0.49985	0.49986	0.49986	0.49987	0.49987	0.49988	0.49988	0.49989
3.7	0.49989	0.4999	0.4999	0.4999	0.49991	0.49991	0.49992	0.49992	0.49992	0.49992
3.8	0.49993	0.49993	0.49993	0.49994	0.49994	0.49994	0.49994	0.49995	0.49995	0.49995
3.9	0.49995	0.49995	0.49996	0.49996	0.49996	0.49996	0.49996	0.49996	0.49997	0.49997
4.0	0.49997	0.49997	0.49997	0.49997	0.49997	0.49997	0.49998	0.49998	0.49998	0.49998