



FACULTY OF COMMERCE; HUMAN SCIENCES AND EDUCATION

HAROLD PUPKEWITZ GRADUATE SCHOOL OF BUSINESS

QUALIFICATION: DIPLOMA IN BUSINESS PROCESS MANAGEMENT	
QUALIFICATION CODE: 06DBPM	LEVEL: 6
COURSE CODE: BBS611C	COURSE NAME: BASIC BUSINESS STATISTICS
SESSION: NOVEMBER 2024	PAPER: PAPER 1
DURATION: 3 HOURS	MARKS: 90

FIRST OPPORTUNITY EXAMINATION – QUESTION PAPER

EXAMINER(S)	Mr. A. Roux
MODERATOR:	Mr. J. Amunyela

INSTRUCTIONS

1. Answer ALL the questions.
2. Write clearly and neatly.
3. Number the answers clearly.

PERMISSIBLE MATERIALS

1. Examination paper
2. Examination script
3. Scientific calculator

ATTACHMENTS

1. Standard Normal Probability Distribution Table
2. 1 x A4 Graph Sheet

THIS QUESTION PAPER CONSISTS OF 3 PAGES (INCLUDING THIS FRONT PAGE)

QUESTION 1 [30]

The data below represents the cost of electricity (in N\$) during the month of June, 2003 for a random sample of 40 two- bedroom apartments in Windhoek.

250 600 553 295 210 389 400 625 850 723
 157 423 300 239 487 535 762 532 672 678
 522 435 628 456 239 863 764 433 677 245
 342 296 456 586 349 421 568 825 924 598

1.1 Summarize the data in a frequency distribution with classes of equal width of N\$100 , starting at N\$100 - < N\$200 ; N\$200 - < N\$300 ; ext.. (8)

1.2 Represent the data graphically by means of a histogram and a frequency polygon. (4+3 =7)

1.3 Use the grouped data set produced in 1.1 to calculate and interpret the

1.3.1) mean (3)

1.3.2) median (6)

1.3.3) mode (6).

QUESTION 2 [15]

Consider the contingency table below.

	Production	Sales	Management	Others	Total
Undergraduate	92	76	24	65	257
Graduate	19	15	62	41	137
Postgraduate	15	26	37	28	106
Total	126	117	123	134	500

If one employee is randomly selected, what is the probability that he or she:

2.1) is either a postgraduate or belongs to sales department? (3)

2.2) is an undergraduate given that he/she belongs to production department? (3)

2.3) is neither a postgraduate nor belongs to management department? (4)

2.4) does not belong to sales department given that is not a graduate? (5)

QUESTION 3 [30]

3.1 A company which supplies concrete to the building industries receives on average 6 orders per day. What is the probability that on any given working day:

- 3.1.1) No orders will be received (4)
- 3.1.2) Exactly 4 orders will be received (4)
- 3.1.3) At least three orders will be received (7)

3.2 The past record from a company indicated the 90% of customers pay by credit card for their items. In a random sample of 25 customers, what is the probability that:

- 3.1.1) Exactly 20 will pay by credit card. (3)
- 3.1.2) At least twenty will pay by credit card. (6)
- 3.1.3) At most twenty four will pay by credit card. (6)

QUESTION 4 [15]

A private hospital in the Khomas Region estimates that its maximum weekly demand for water during the coming few weeks can be approximated by a normal distribution with a mean of 100 Kilolitre and a standard deviation of 10 Kilolitre.

- 4.1) Determine the probability that the maximum weekly demand will be between 100 kl and 125 kl (5)
- 4.2) Determine the probability that the maximum weekly demand will be between 94 kl and 108 kl (5)
- 4.3) Determine the probability that a given weekly's maximum demand will exceed 87 kl (5)

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Z - Table

The table shows cumulative probabilities for the standard normal curve.

Cumulative probabilities for **NEGATIVE** z-values are shown first. **SCROLL DOWN** to the 2nd page for **POSITIVE** z

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
-3.4	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0002
-3.3	.0005	.0005	.0005	.0004	.0004	.0004	.0004	.0004	.0004	.0003
-3.2	.0007	.0007	.0006	.0006	.0006	.0006	.0006	.0005	.0005	.0005
-3.1	.0010	.0009	.0009	.0009	.0008	.0008	.0008	.0008	.0007	.0007
-3.0	.0013	.0013	.0013	.0012	.0012	.0011	.0011	.0011	.0010	.0010
-2.9	.0019	.0018	.0018	.0017	.0016	.0016	.0015	.0015	.0014	.0014
-2.8	.0026	.0025	.0024	.0023	.0023	.0022	.0021	.0021	.0020	.0019
-2.7	.0035	.0034	.0033	.0032	.0031	.0030	.0029	.0028	.0027	.0026
-2.6	.0047	.0045	.0044	.0043	.0041	.0040	.0039	.0038	.0037	.0036
-2.5	.0062	.0060	.0059	.0057	.0055	.0054	.0052	.0051	.0049	.0048
-2.4	.0082	.0080	.0078	.0075	.0073	.0071	.0069	.0068	.0066	.0064
-2.3	.0107	.0104	.0102	.0099	.0096	.0094	.0091	.0089	.0087	.0084
-2.2	.0139	.0136	.0132	.0129	.0125	.0122	.0119	.0116	.0113	.0110
-2.1	.0179	.0174	.0170	.0166	.0162	.0158	.0154	.0150	.0146	.0143
-2.0	.0228	.0222	.0217	.0212	.0207	.0202	.0197	.0192	.0188	.0183
-1.9	.0287	.0281	.0274	.0268	.0262	.0256	.0250	.0244	.0239	.0233
-1.8	.0359	.0351	.0344	.0336	.0329	.0322	.0314	.0307	.0301	.0294
-1.7	.0446	.0436	.0427	.0418	.0409	.0401	.0392	.0384	.0375	.0367
-1.6	.0548	.0537	.0526	.0516	.0505	.0495	.0485	.0475	.0465	.0455
-1.5	.0668	.0655	.0643	.0630	.0618	.0606	.0594	.0582	.0571	.0559
-1.4	.0808	.0793	.0778	.0764	.0749	.0735	.0721	.0708	.0694	.0681
-1.3	.0968	.0951	.0934	.0918	.0901	.0885	.0869	.0853	.0838	.0823
-1.2	.1151	.1131	.1112	.1093	.1075	.1056	.1038	.1020	.1003	.0985
-1.1	.1357	.1335	.1314	.1292	.1271	.1251	.1230	.1210	.1190	.1170
-1.0	.1587	.1562	.1539	.1515	.1492	.1469	.1446	.1423	.1401	.1379
-0.9	.1841	.1814	.1788	.1762	.1736	.1711	.1685	.1660	.1635	.1611
-0.8	.2119	.2090	.2061	.2033	.2005	.1977	.1949	.1922	.1894	.1867
-0.7	.2420	.2389	.2358	.2327	.2296	.2266	.2236	.2206	.2177	.2148
-0.6	.2743	.2709	.2676	.2643	.2611	.2578	.2546	.2514	.2483	.2451
-0.5	.3085	.3050	.3015	.2981	.2946	.2912	.2877	.2843	.2810	.2776
-0.4	.3446	.3409	.3372	.3336	.3300	.3264	.3228	.3192	.3156	.3121
-0.3	.3821	.3783	.3745	.3707	.3669	.3632	.3594	.3557	.3520	.3483
-0.2	.4207	.4168	.4129	.4090	.4052	.4013	.3974	.3936	.3897	.3859
-0.1	.4602	.4562	.4522	.4483	.4443	.4404	.4364	.4325	.4286	.4247
0.0	.5000	.4960	.4920	.4880	.4840	.4801	.4761	.4721	.4681	.4641

Cumulative probabilities for **POSITIVE** z-values are shown below.

[illegible]

