ELIZADE UNIVERSITY, ILARA-MOKIN, ONDO STATE

FACULTY OF SOCIAL & MANAGEMENT SCIENCES

SECOND SEMESTER EXAMINATIONS

2018/2019 ACADEMIC SESSION

COURSE CODE: BST 202

COURSE TITLE: BUSINESS STATISTICS

DURATION: 2 HOURS.

INSTRUCTION: Attempt section A and any other two (2) questions in section B.

SECTION A

1. If $X \sim Bi$ (8, 0.4), find P (X =5) (a). 0.124 (b). 0.826   (c). 0.959 (d). 0.999 (e). 0.012

2. If $X \sim P_0$ (1.0), find P $(2 \leq x \geq 5)$ (a). 0.02 (b). 0.263 (c). 0.136 (d). 0.9 (e) 0.15

3. Numerical quantity summarizing population is known as: (a). Statistics (b). Variable (c). Concept (d). Parameter (e). Model

4. If (A) = 0.3, P (B) = 0.78, P (AUB) = 0.92, what is P (A n B)? (a). 0.15 (b). 0.16 (c). 0.234 (d). 0.39 (e). 0.10

5. The mean of 0.5, 1.5, 0.6, and x is 0.8. What is the value of x? (a). 0.60 (b). 1.40 (c). 1.50 (d). – 0.20 (e). – 0.42

6. Given that the mean of a distribution is 62, the mode is 52 and the standard deviation is 25. Calculate the coefficient of skewness (a). 0.2 (b). 0.4 (c). 0.6 (d). 0.8 (e). 0.3

7. Four coins are tossed together. What is the probability that they will show the same face? (a). 1/6 (b). 1/8 (c). ¼ (d). ½   (e). 2/5

8. The Bernoulli, Binomial and Poisson distribution are (a). Ordinal data (b). Statistics (c). Continuous distribution (d). Normal and Ordinal distribution (e). Discrete distribution

9. The probability that Akpan will pass GST 210 and GST 216 are 0.6 and 0.85 respectively. What is the probability that he will fail both courses? (a). 0.55 (b). 0.25 (c). 0.06 (d). 0.17 (e). 0.67

10. What is the mean absolute derivation of the data set; 7, 3, 12, 18? (a). 4 (b). 6 (c). 5 (d). 0 (e). 2   **(30 marks)**

SECTION B

1. As a young social scientist and a research student of Bell's University, Consult, Lagos, it is once believed that there is a relationship between unemployment rate and crime rate as shown in the table.

Unemployment rate	320	335	405	310	380	195	265	320	450	360
Crime rate	75	70	84	76	77	56	59	78	84	85

Required:

a. Formulate a research hypotheses for the above so that the research problem could be studied.

(2 marks)

b. Calculate the correlation coefficient using Pearson Product Moment Correlation. (8 marks)

c. What is the result, with the level of significance at 1%? (5 marks)

2. An electronic company manufacturing a specific component found out that of every 1,000 components produced, 8 were defective. If the components are packed in boxes of 250, find:

a. The probability of obtaining 0, 1, 2, 3, defective components in a box. (6 Marks)

b. The probability that the box contains at least 3 defective components. (9 Marks)

4. A researcher was interested in the relative price of palm oil gathered information on consumer Price of a liter of palm oil. The prices in the market in the years 2010 and 2018 were N5 and N1100 respectively. Calculate the price relative index.
(a).   Price 2010 and Price 2018, where 2010 is the base price   (5 Marks)
(b).   Price 2010 and Price 2018, where 2018 is the base price   (5 Marks)
(c).   Indicate the implication of your result.   (5 Marks)

TABLE 22: PERCENTAGE POINTS OF THE t-DISTRIBUTION

One Tail	$P = 0.05$	0.025	0.005	0.0005
Two Tail	$P = 0.10$	0.05	0.01	0.001
$\nu = 1$	6.31	12.71	63.66	636.62
2	2.92	4.30	9.92	31.60
3	2.35	3.18	5.84	12.94
4	2.13	2.78	4.60	8.61
5	2.02	2.57	4.03	6.87
6	1.94	2.45	3.71	5.96
7	1.89	2.36	3.50	5.41
8	1.86	2.31	3.36	5.04
9	1.83	2.26	3.25	4.78
10	1.81	2.23	3.17	4.59
11	1.80	2.20	3.12	4.44
12	1.78	2.18	3.05	4.32
13	1.77	2.16	3.01	4.22
14	1.76	2.14	2.98	4.14
15	1.75	2.13	2.95	4.07
16	1.75	2.12	2.92	4.02
17	1.74	2.11	2.90	3.97
18	1.73	2.10	2.88	3.92
19	1.73	2.09	2.86	3.88
20	1.72	2.09	2.85	3.85
21	1.72	2.08	2.83	3.82
22	1.72	2.07	2.82	3.79
23	1.71	2.07	2.81	3.77
24	1.71	2.06	2.80	3.75
25	1.71	2.06	2.79	3.73
26	1.71	2.06	2.78	3.71
27	1.70	2.05	2.77	3.69
28	1.70	2.05	2.76	3.67
29	1.70	2.04	2.76	3.66
30	1.70	2.04	2.75	3.65
40	1.68	2.02	2.70	3.55
50	1.68	2.01	2.68	3.50
100	1.66	1.98	2.63	3.39
∞	1.64	1.96	2.58	3.29