Course No: 1308 BUS -1308BSNE
Course Title: principal of statistic
Date: 17/4/2019
No. of Questions: (3)
Time: 1 hours
Using Calculator (yes)

University of Palestine

2nd Midterm
2018/2019
Total Grade:30

Instructor Name: Assem -Bashar- Osma
Student No.: _____
Student Name: _____
College Name: _____
Dep. / Specialist: _____
Using Dictionary (No)

Question One: 10 marks

A sales manager collected the following data on annual sales and years of experience.

Years of Experience (x)	1	3	4	4	6	8	10	10
Annual Sales ($1000) (y)	7	8	9	10	10	12	11	13

a. Compute the sample correlation coefficient. What does this value tell us about the relationship between Years of Experience and sales?

b. Develop an estimated regression equation by computing the values of b0 , b1 and $\hat{y}$.

c. . Use the estimated regression equation to predict annual sales for a salesperson with 9 years of experience.

Question two : 10 marks

The employees of a company were surveyed on questions regarding their gender and smoking Of the 600 employees, 400 had male, 100 were no smoke , and 60 were no smoke male complete the table and found ?

Smoke / Gender	No smoke	smoke	Total
Male	60		400
female			
Totals	100		600

1) The probability that an employee of the company is no smoke or male is :

2) The probability that an employee of the company is smoke and male is

3) The probability that an employee of the company female is.

4) The probability that $P(\text{female}|\text{smoke})$

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Question three : 10 marks

The probability that a particular type of warning system at the bank are working correctly in the presence of the danger is 0.7. You have 3 of these warning system in the bank, it works independently.

1) the probability that all warning system are working in the presence of danger is?

2) the probability that exactly 2 warning system working in the presence of danger is?

3) the probability that at least one warning system working in the presence of danger is?

4) the probability that at most 2 warning system working in the presence of danger is?

5) compute the Expected Value for this distribution :

6) compute the Variance for this distribution:

The end of the questions With best wishes for all

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Rules Help

$\sigma_p = \sqrt{\frac{\pi[1-\pi]}{n}}$	$S^2 = \frac{\sum_{i=1}^{n}(X_i - \bar{X})^2}{n-1}$	$\sigma_{\bar{X}} = \frac{\sigma}{\sqrt{n}}\sqrt{\frac{N-n}{N-1}}$
$b_0 = \bar{y} - b_1\bar{x}$	$\hat{y} = b0 - b1xi$	Range = $X_{largest} - X_{smallest}$
$\bar{X} \pm Z_C \frac{\sigma}{\sqrt{n}}$	$\sigma_{P_1-P_2} = \sqrt{\frac{\pi_1(1-\pi_1)}{n_1} + \frac{\pi_2(1-\pi_2)}{n_2}}$	$CV = \left(\frac{S}{\bar{X}}\right)\cdot 100\%$
$S = \sqrt{\frac{\sum_{i=1}^{n}(X_i - \bar{X})^2}{n-1}}$	$r = \frac{\sum_{i=1}^{n}(X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum_{i=1}^{n}(X_i - \bar{X})^2}\sqrt{\sum_{i=1}^{n}(Y_i - \bar{Y})^2}}$	$b_1 = \frac{\Sigma(x_i - \bar{x})(y_i - \bar{y})}{\Sigma(x_i - \bar{x})^2}$
$Z = \frac{X - \bar{X}}{S}$	$\mu_{P_1-P_2} = \mu_{\pi_1} - \mu_{\pi_2} = \pi_1 - \pi_2$	$\bar{X} = \frac{\sum_{i=1}^{n} X_i}{n}$