

Answer Key

Testname: EX3SAMPLE9_11

- 1) A
- 2) B
- 3) B
- 4) B
- 5) D
- 6) D
- 7) A
- 8) C
- 9) C

10) $H_0: p_1 = p_2$ or $p_1 \geq p_2$. $H_1: p_1 < p_2$.

Test statistic: $z = -1.80$. P-value: 0.04. Because the P-value of 0.04 is less than the significance level of $\alpha = 0.05$, we reject the null hypothesis. There is sufficient evidence to support the claim that the vaccine is effective in lowering the incidence of the disease.

11) $H_0: \mu_1 = \mu_2$. $H_1: \mu_1 \neq \mu_2$.

Test statistic $t = -2.37$. P-value: 0.02. Because the P-value of 0.02 is greater than the significance level of $\alpha = 0.01$ we fail to reject the null hypothesis. There is not sufficient evidence to support the claim that the treatment population mean μ_1 is different than the control population μ_2 .

12) $H_0: \mu_d = 0$; $H_1: \mu_d > 0$

Test statistic $t = 1.96$. P-value: 0.05. Because the P-value of 0.05 is greater than the significance level of $\alpha = 0.01$, we fail to reject the null hypothesis. There is not sufficient evidence to support the claim that the diet is effective in reducing weight.

13) H_0 : Workplace accidents occur according to the stated percentages.

H_1 : Workplace accidents do not occur according to the stated percentages.

Test statistic: $\chi^2 = 1.440$. P-value: 0.84. Fail to reject the null hypothesis since the P-value is greater than 0.10. There is not sufficient evidence to warrant rejection of the claim that workplace accidents occur according to the stated percentages.