

QUIZ 12 VI TEST OF HYPOTHESIS

Roll No.	Marks
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1. If p = sample proportion, P = the probability of success, Q = the probability of failure and n = sample size, then we use the test statistic

(a) $z = \frac{p+P}{\sqrt{\frac{PQ}{n}}}$ (b) $z = \frac{p+P}{\sqrt{\frac{PQ}{n}}}$ (c) $z = \frac{p-P}{\sqrt{\frac{PQ}{n}}}$ (d) $z = \frac{p-P}{\sqrt{\frac{PQ}{n}}}$ []

2. If p = sample proportion, P = the probability of success, Q = the probability of failure and n = sample size, then 99% confidence interval is

(a) $\left(p - 3\sqrt{\frac{PQ}{n}}, p + 3\sqrt{\frac{PQ}{n}} \right)$ (b) $\left(p + 3\sqrt{\frac{PQ}{n}}, p - 3\sqrt{\frac{PQ}{n}} \right)$ (c)
 $\left(p - 1.96\sqrt{\frac{PQ}{n}}, p + 1.96\sqrt{\frac{PQ}{n}} \right)$ (d) $\left(p + 1.96\sqrt{\frac{PQ}{n}}, p - 1.96\sqrt{\frac{PQ}{n}} \right)$ []

3. If $\bar{x}_1 = 400$, $\bar{x}_2 = 600$; $\sigma_1 = 600$, $\sigma_2 = 40$; $n_1 = n_2 = 200$, then $z = ?$

(a) 2 (b) 20 (c) 200 (d) None []

4. If $\bar{x}_1 = 100$, $\bar{x}_2 = 150$; $\sigma_1 = 10$, $\sigma_2 = 200$; $n_1 = 200$, $n_2 = 800$, then $z = ?$

(a) 10 (b) 100 (c) 20 (d) None []

5. If 36 and 49 are the variances of the samples of sizes 12 and 8 respectively, then $\sigma^2 = ?$

(a) 6.4 (b) 412 (c) 41.2 (d) None []

6. If 64 and 81 are the variances of the samples of sizes 84 and 36 respectively, then $\sigma^2 = ?$

(a) 8.3 (b) 69.1 (c) 691 (d) None []

7. If $p = 8.2$, $P = 0.8$, $Q = 0.2$ and $n = 210$, then 99% confidence interval is

(a) (8.1172, 8.2828) (b) (8.1459, 8.2541) (c) (7.4, 9) (d) None []

8. If $p = 6.8$, $P = 0.6$, $Q = 0.4$ and $n = 305$, then 99% confidence interval is

(a) (6.2, 6.4) (b) (5.9585, 7.6415) (c) (6.745, 6.855) (d) None []

9. The maximum error of estimate for the proportion p is

(a) $E = z_{\alpha/2} \sqrt{\frac{PQ}{n}}$ (b) $E = t_{\alpha/2} \sqrt{\frac{PQ}{n}}$ (c) $\frac{1}{4} \left(\frac{z_{\alpha/2}}{E} \right)$ (d) None []

10. If E is the maximum error of estimate for the proportion p of a sample of size n , then

(a) $\left(\frac{t_{\alpha/2}}{E} \right)^2 PQ$ (b) $\left(\frac{z_{\alpha/2}}{E} \right)^2 PQ$ (c) $\frac{1}{4} \left(\frac{z_{\alpha/2}}{E} \right)^2$ (d) None []

11. Maximum error E for the difference of proportions is

(a) $\left(\frac{z_{\alpha/2}}{E} \right)^2 PQ$ (b) $\frac{1}{4} \left(\frac{z_{\alpha/2}}{E} \right)^2$ (c) $z_{\alpha/2} \sqrt{PQ \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}$ (d) None []

12. The formula for the standard error of proportions p_1 and p_2 is

(a) $\sqrt{PQ\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}$ (b) $z_{\alpha/2}\sqrt{PQ\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}$ (c) $PQ\left(\frac{1}{n_1} + \frac{1}{n_2}\right)$ (d) None []

13. If $P = 0.3$ for two samples of sizes 20 and 30, then the standard error of proportions is

(a) 0.1323 (b) 0.175 (c) 0.0592 (d) None []

14. If $P = 0.4$ for two samples of sizes 15 and 25, then the standard error of proportions is

(a) 0.0256 (b) 0.16 (c) 0.08 (d) 0.0064 []

15. If $P = 0.2$ for two samples of sizes 18 and 27, then the standard error of proportions is

(a) 0.0148 (b) 0.0544 (c) 0.1217 (d) 0.00296 []

16. If $P = 0.5$ for two samples of sizes 36 and 71, then the standard error of proportions is

(a) 3.4233 (b) 0.0585 (c) 0.0105 (d) 0.1023 []

17. If P is the probability of success for the two samples of sizes n_1 and n_2 respectively, then the maximum error at $(1-\alpha)$ level of significance is

(a) $t_{\alpha/2}\sqrt{PQ\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}$ (b) $z_{\alpha/2}\sqrt{PQ\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}$ (c) $z_{\alpha/2}\left[PQ\left(\frac{1}{n_1} + \frac{1}{n_2}\right)\right]$
(d) None []

18. If $P = 0.3$ for the two samples of sizes 14 and 23 respectively, then the maximum error at 0.05 level of significance is

(a) 12.1361 (b) 3.4837 (c) 0.1501 (d) 0.0225 []

19. If $P = 0.2$ for the two samples of sizes 22 and 56 respectively, then the maximum error at 0.05 level of significance is

(a) 0.1973 (b) 0.0389 (c) 0.1302 (d) 0.0170 []

20. If $P = 0.4$ for the two samples of sizes 59 and 41 respectively, then the maximum error at 0.05 level of significance is

(a) 0.1952 (b) 0.0296 (c) 0.0381 (d) 0.0225 []