ورقة الأسئلة

 جامعة الملك سعود

 الاختبار الثانى

 كلية العلوم الفصل الثاني 1428/ 1429

قسم الإحصاء وبحوث العمليات مقرر 324 إحص

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 اسم الطالبة : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 رقم الطالبة : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 رقم الشعبة : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ رقم التسلسل :\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 أستاذة المقرر : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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ضعي الحرف ذو الإجابة الصحيحة في الخانة المخصصة لكل سؤال

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| 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | Question |
|  |  |  |  |  |  |  |  |  |  |  |  |  | Answer |
|  | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | Question |
|  |  |  |  |  |  |  |  |  |  |  |  |  | Answer |

 **مع أطيب التمنيات بالنجاح والتوفيق**

\*Suppose we have the following data 3 7,42,28,28,61,31,23,50,34,32. Then

1- The sample mean is

(a) 36.6 (b) 13.809 (c) 33.716 (d) 26.667 e) none of these

2- The sample variance is

(a) 36.59 (b) 132.933 (c) 33.716 (d) 26.667 (e) none of these

3- The standard deviation is

(a) 3.59 (b) 11.53 (c) 3.716 (d) 6.667 (e) none of these

4- The sample median is

(a) 5.5 (b) 23 (c) 28 (d) 3 (e) none of these

5- The sample mode is

(a)3 7, 28 (b) no mode (c) 28 (d) 3 (e) none of these

6- The range is

(a) 11 (b) 38 (c) 9 (d) 28 (e) none of these

A sample of size 14 from health adult males is drawn to measured their body mass index (BMI) kg/$m^{2}$, with sample mean 30.5 and standard deviation 10.639. Assuming that the population is normally distributed, test whether the mean of (BMI) of the population is greater than 35. (Use α=0.01). Then

 7- The hypothesis is

(a)$H\_{0}:µ=35 H\_{1}:µ>$35 (b) $H\_{0}:µ=30.5 H\_{1}:µ>30.$5

(c)$H\_{0}:µ=35 H\_{1}:µ \ne $30.5 (d) none of these

 8- The test statistic is

(a)  (b)  (c)  (d) none of these

9- Is the test

(a) One side (b) two side (c) can't determine

10- The numerical value for the test statistic is

(a) 3.09 (b) 1.58 (c) -1.58 (d) -4.58 (e) none of these

11- The decision is

(a) We cannot reject  (b) we accept  (c) we reject

A physical therapist wished to estimate, with 99% confidence the mean maximal strength of a particular muscle in a certain group of individuals. A sample of 50 subjects who participated in the experiment yielded a mean of 81.53 with variance 13.55. Then

12- The confidence interval is

(a) (80.187, 82.873) (b) (70.187, 72 .873) (c) (-60.17, 62.873) (d) (-70.187, 72 .873)

(e) none of these

The heights of a random sample from the university students showed that the mean is 174.5 Cm and the standard deviation is 6.9 Cm, if we want to be 95% confidence that the error in estimating the population mean is within 1 Cm. Then

13- The sample size is

 (a) 182.89 (b) 183 (c) 128.89 (d) 128 (e) none of these

A random sample of size 25 is taken from a normal population having a mean of 80 and the standard deviation is 5. A second independent random sample of size 36 is taken from a different normal population having a mean of 75 and the standard deviation is 3. Then

14- P$\left(\overbar{X}\_{1}-\overbar{X}\_{2}>2\right)=$

(a) 0.0037 (b) 0.9963 (c) 0.9926 (d) 0.667 (e) none of these

Let T has t-distribution, then

15- P($T\_{(7)}$<2.3646) =

(a) 0.99 (b) 0.975 (c) 0.90 (d) 0.95 (e) none of these

16-The value of t which satisfies P($T\_{(20)}$<t)=0.05

(a) -1.7247 (b) 1.7247 (c) 1.729 (d) -1.729 (e) none of these

17- t-distribution depend on

(a) n, p (b) the degree of freedom (n-1) (c) p (d) µ,σ (e) none of these

18-The power of the test is

(a) Type I error, α (b) type II error, β (c)1- β (d) p (e) none of these

If a sample of size 64 is drawn from a population with mean 12 and standard deviation 4, then

19- P$\left(\overbar{X}\_{}<11\right)$=

(a) 0.0228 (b) 0.9772 (c) 0.9778 (d) 0.4207 (e) none of these

The following data represents the running times of films produced by two motion picture companies, then

|  |  |
| --- | --- |
| Company 1 | Company 2 |
| $n\_{1}^{}=$16 | $n\_{2}^{}=$16 |
| $\overbar{X\_{1}}=184.5$2 | $$\overbar{ X\_{2}}=180.125$$ |
| $S\_{1}^{2}=$24.91 | $S\_{2}^{2}=$22.56 |

20- A 95% confidence interval for $\left(µ\_{1}-µ\_{2}\right)$ is

(a) (-12.187, 20.873) (b) (-13.034, 21 .284) (c) (-22.17, 42.873) (d) (70.187, 72 .873)

(e) none of these

To test a certain college is estimated that at most 25% of the students drink milk in the morning, with α=0.05. If a random sample of 90 college students is drawn and 28 are found to drink milk in the morning. Then

21- The hypothesis is

(a)$H\_{0}:p=0.25 H\_{1}:p>0.25 $ (b) $H\_{0}:p=0.25 H\_{1}:p<0.2$5

(c)$H\_{0}:µ=0.25 H\_{1}:µ \ne $0.25 (d) none of these

22- The numerical value for the test statistic is

(a) 3.09 (b) 1.336 (c) -1.58 (d) -4.58 (e) none of these

23- The decision is

(a) We cannot reject  (b) we accept  (c) we reject

In the section of studying physics with labs, 11 students made an average grade of 85 with standard deviation 4.7, and in the section without labs 17 students made an average grade of 79 with standard deviation 6.1. Assuming that the populations to be approximately normally distributed with equal variances and the level of significance is α=0.01. To test the hypothesis that the laboratory course increases the average grade by as much as 8 points, then

24- The hypothesis is

(a) $H\_{0}:µ\_{1}-µ\_{2}=8 H\_{1}:µ\_{1}-µ\_{2}>$8 (b) $H\_{0}:µ\_{1}-µ\_{2}=8 H\_{1}:µ\_{1}-µ\_{2}$<8

(c) $H\_{0}:µ\_{1}-µ\_{2}=8 H\_{1}:µ\_{1}-µ\_{2}$≠8 (d) none of these

 25- The test statistic is

a)$ t=\frac{\overbar{(X}\_{1}-\overbar{X}\_{2})-d}{S\_{p}\sqrt{\frac{1}{n\_{1}}+\frac{1}{n\_{2}}}}$ b) $Z=\frac{\overbar{(X}\_{1}-\overbar{X}\_{2})-d}{\sqrt{\frac{S^{2}}{n\_{1}}+\frac{S^{2}}{n\_{2}}}}$ c)$ t=\frac{\overbar{X}\_{1}-\overbar{X}\_{2}}{S\_{p}\sqrt{\frac{1}{n\_{1}}+\frac{1}{n\_{2}}}}$ d) none of these

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