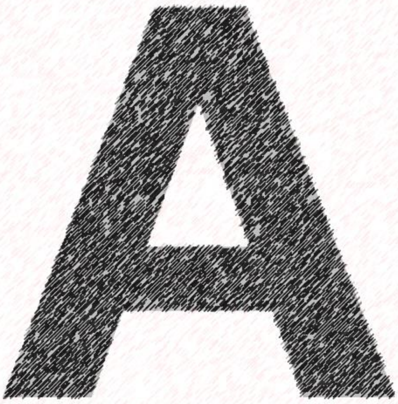
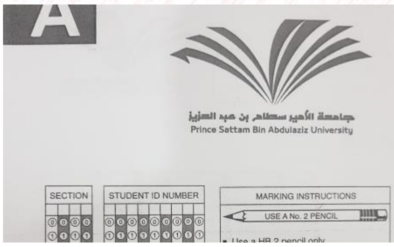


المملكــة العربيـــة السعوديـــــة
وزارة التعليـــــم العالي
جامعـة الأمير سطام بن عبد العزيـــز
عمادة السنة التحضيرية

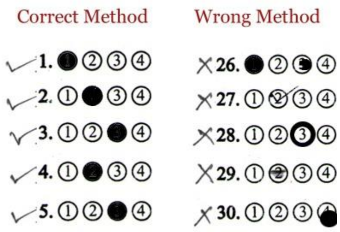
الاختبار النهائي في الإحصاء الحيوي (106 احص)

للفصل الدراسي الثاني من العام الجامعي 1439/ 1440 هـ



انتبه

- **تأكـــد** ان نمـــوذج BUBBLE هـــو نمـــوذج A.
- الدقة والتركيز عند **النقـــــــل** إلى نموذج الإجابات.
- راجع نمـوذج الإجـابات بتركيز .. لا تترك **فـــــراغات**.
- يمنع **الهاتف** المحمول **والساعة** الذكية أثناء الاختبار.
- يسمح بالحاســـــبة **ولا** يســــــمح **بتـــداولـــها**.



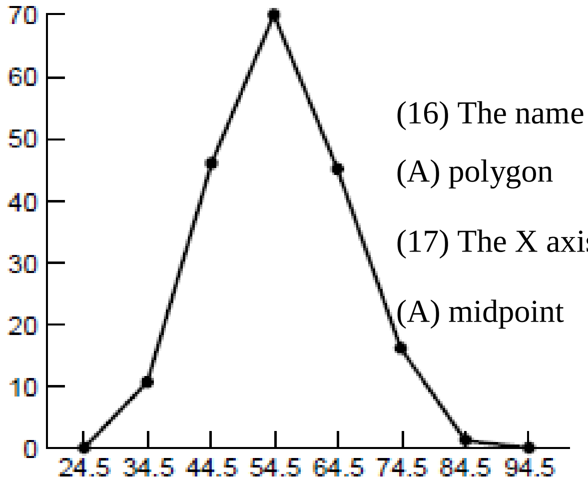
الاسم رباعي										
الرقم الجامعي										
رقم الشعبـــة										
رقم المجموعة										
أستاذ المقرر										

مدة الاختبار ساعتين	**الاختبار من** 50 **درجة لكل سؤال**
يبدأ الاختبار الساعة 01:00 **إلى** 03:00 **عصراً**	**الاختبار مكون من** 4 **ورقات مع الغلاف**
التاريخ 25-04-2019	**الموافق** 20-08-H1440

Write A if True and B if False:

(1)	The ordinal Scale considered as a source of data.	
(2)	If $P(A \cap B) = P(B)\, P(A)$, then A and B are independent events.	
(3)	The *arithmetic mean* is not affected by extreme values.	
(4)	Weights of babies born in a hospital during a year is quantitative variable.	
(5)	$\mathrm{P}(A^c) = 1 - P(A)$	
(6)	Relative Frequency = Frequency / n	
(7)	If $\mathrm{P}(\mathrm{A} \cap \mathrm{B}) = 0$, then A and B are Disjoint events.	
(8)	A descriptive measure computed from the data of a population is called a statistic.	
(9)	The normal distribution is determined by the measure of *range* and *standard deviation*.	
(10)	Stem and Leaf Display preserve the information contained in the individual data	
(11)	the upper Confidence limit of Interval Estimation is $\mu = \bar{x} - Z_{1-\frac{\alpha}{2}} \frac{\sigma}{\sqrt{n}}$	
(12)	The median affected by extreme value	
(13)	Midpoint used to represent X axis of stem and leaf display	
(14)	Probability is the collection of all entities under study	
(15)	$P(\emptyset) = 1$	

The graph below display the frequency distribution of the ages of 200 subjects:



(16) The name of the graph is

(A) polygon (B) bar chart (C) histogram (D) Pie chart (E) Stem

(17) The X axis represent

(A) midpoint (B) frequency (C) RF (D) variable name (E) None

(18) The numbers of subjects at the point 54.5 is:
(A) 50 (B) 60 (C) 70 (D) 80 (E) 0.0

(19) The numbers of subjects at the point 94.5 is:
(A) 5 (B) 30 (C) 10 (D) 20 (E) 0.0

(20) If $\mathrm{P}(\mathrm{A} \cap \mathrm{B}) = 0.14, \mathrm{P}(\mathrm{A}) = 0.5,\ \mathrm{P}(\mathrm{B}) = 0.2$, Then $\mathrm{P}(\mathrm{A}|\mathrm{B}) = \cdots$:
(A) 0.28 (B) 0. 7 (C) 1.43 (D) -0.7 (E) 0.82

(21) In the………… distribution, the density function has a bell-shaped curve.
(A) binomial (B) Bernoulli (C) Poisson (D) normal (E) none of them

(22) The sample proportion denoted by:
(A) β (B) α (C) $\bar{x}$ (D) $\hat{p}$ (E) none of them

(23) Using standard normal distribution $\mathrm{P}(z = 0.5000) = \cdots$:
(A) 2.61 (B) 0.00 (C) 10.0 (D) 0.01 (E) none of them

(24) The standard deviation is square root of :
(A) Range (B) Sample (C)variance (D) Mean (E) None of them

(25) A characteristic takes different values in different persons , places or things is :
(A) Variable (B) Range (C) Sample (D) Population (E) None of them

The following table shows patients classified by blood Group:

Blood group	O	A	B	AB	Total
No. patients	779	436	406	175	1796

If we randomly select one patient, what is the probability that the patient?

(26) has a blood group O

(A) $\frac{779}{1796}$ (B) $\frac{389}{2720}$ (C) $\frac{779}{1769}$ (D) $\frac{436}{2720}$ (E) $\frac{196}{2720}$

(27) has a blood group AB or a blood group O

(A) $\frac{445}{196}$ (B) $\frac{945}{1769}$ (C) $\frac{436}{1796}$ (D) $\frac{175}{2720}$ (E) $\frac{954}{1796}$

(28) has a blood group AB and has blood group B

(A) $\emptyset$ (B) $\frac{1796}{1796}$ (C) 0.0 (D) $\frac{436}{2720}$ (E) $\frac{842}{1796}$

Write A if these distributions are probability distributions, and if not, write B.

x	0	1	2	3
P(x)	0.15	0.2	0.3	0.1

(29) ◯

x	0	1	2	3	4
P(x)	0.1	0.25	1.0	0.25	0.3

(30) ◯

x	0	1	2	3
P(x)	0	0.0	0	0.01

(31) ◯

X	122	123	124	125
P(x)	0.2	0.7	− 0.1	0.4

(32) ◯

x	−1	0	1	2	3	4
P(x)	0.15	0.3	0.2	0.15	0.1	0.1

(33) ◯

x	3	1	2	0
P(x)	0	⅞	0	⅛

(34) ◯

Suppose the average length of stay in a chronic disease hospital of a certain type of patient is 40 days with a standard deviation of 15. If it is reasonable to assume an approximately normal distribution of lengths of stay, in question 36,37 find the probability that a randomly selected patient from this group will have a length of

(35) $Z =$

(A) $\frac{x-\bar{x}}{\sigma}$ (B) $\frac{x-\sigma}{\bar{x}}$ (C) $\frac{x-\mu}{\sigma}$ (D) $\frac{\mu-x}{\sigma}$ (E) None of them

(36) Stay less than 10 days

(A) 0.9772 (B) 0.228 (C) 0.0228 (D) 2 (E) -2

(37) Stay less than 70 days

(A) 0.9772 (B) 0.228 (C) 0.0228 (D) 2 (E) -2

If the uric acid values in normal adult males are approximately normally distributed with a mean of 48 mg and standard deviation 10 mg, respectively, in question 40, 41 find the probability that a sample of size 25 will yield a mean:

(38) The population mean (μ)=

(A) 10 mg (B) 48 mg (C) 25 (D) 4.8 mg (E) 0.0 mg

(39) $Z =$

(A) $\frac{x-\bar{x}}{\sigma}$ (B) $\frac{x-\sigma}{\bar{x}}$ (C) $\frac{\bar{x} - \mu}{\sigma/\sqrt{n}}$ (D) $\frac{\mu-x}{\sigma}$ (E) None of them

(40) Greater than 51

(A) 0.7019 (B) 0.9332 (C) 0.9281 (D) 0.0668 (E) 0.0

(41) Less than 51

(A) 0.7019 (B) 0.9332 (C) 0.9281 (D) 0.0 (E) 0.0668

Given a population proportion in which $p = 0.6$ and a random sample from this population of size 100, find:

(42) $Z =$

(A) $\frac{p-\hat{p}}{\sigma}$ (B) $\frac{\hat{p}\ -\ p}{\sqrt{\frac{p(1\ -\ p)}{n}}}$ (C) $\frac{p-\hat{p}}{\sqrt{n}}$ (D) $\frac{p-\hat{p}}{1-\alpha}$ (E) None of them

(43) Sample size

(A) 10 (B) 60 (C) 200 (D) 100 (E) 0.0

(44) $P(\hat{p} \geq 0.65)$

(A) 0.8461 (B) 0.1539 (C) 0.1593 (D) 0.0668 (E) 0.0

(45) $P(0.63 \leq \hat{p} \leq 0.65)$

(A) 0.102 (B) 0.8461 (C) 0.117 (D) 0.0 (E) 1

a sample of 100 apparently normal adult males, 25 years old, had a mean systolic blood pressure of 125. It is believed that the population standard deviation is 15.

(46) $sample\ mean =$

(A) 10 (B) 60 (C) 12.5 (D) 100 (E) 125

(47) $Z_{1-\frac{\propto}{2}}=$

(A)1.96 (B) 65 (C) 1.645 (D) 2.58 (E) 0.0

(48) Sample size=

(A) 100 (B) 19 (C) 200 (D) 10.0 (E) 0.0

(49) Standard deviation=

(A) 10 (B) 3 (C) 15 (D) 100 (E) 0.0

(50) Construct 99 percent confidence intervals for the population mean?

(A) (128.87,121.13) (B) (122.06,127.94) (C) (122.53,127.47) (D) (0,1) (E) (121.13,128.87)

	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817

Good Luck