**جامعة الملك سعود الاختبار الفصلى الثانى**

**كلية العلوم الفصل الأول 1431 / 1432**

**قسم الإحصاء وبحوث العمليات مقرر 324 احص**

**الثلاثاء 15/ 1 / 1432 هـ الوقت 3– 4:30**

**اسم الطالبة : ------------------------------------------------------------------------------------------**

**رقم الطالبة : ------------------------------------------------------------------------------------------**

**رقم الشعبة : ----------------------------- رقم التسلسل : ----------------------------------------------**

**أستاذة المقرر : ----------------------------------------------------------------------------------------**

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| ***Question*** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| ***Answer*** |  |  |  |  |  |  |  |  |  |  |

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| ***Question*** | **11** | **12** | **13** | **14** | **15** | **16** | **17** | **18** | **19** | **20** |
| ***Answer*** |  |  |  |  |  |  |  |  |  |  |

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| ***Question*** | **21** | **22** |
| ***Answer*** |  |  |

***Good Luck***

**Answer the following questions**

**\*Suppose that X is a random variable with E(X)=30 and V(X)=4. By using Chebyshev's theorem, then**

1-  is

(a) 0.111 (b) 0.888 (c) 0.333 (d) 0.75 (e) none of these

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\* In a large population of people, 30% have high blood pressure. If we randomly choose 5 people and let

X = the number of people that have high blood pressure in this sample, then:

2- The probability distribution of X, is P(X = x) =

(a) (0.5)x (0. 5)30-x (b) (0.3)x (0. 7)5-x (c)(0.7)x (0.3)5-x

(e) none of these

3- The values that x takes are:

(a) 1,2,…,30 (b) 1,2,…,5 (c) 0,1,…,5 (d) 0,1,…, 30 (e)none of these

4- P(X = 3) =

(a) 0.1323 (b) 0.3087 (c) 0.6913 (d) 0.8677 (e) none of these

5- The probability that at most there is one person that have high blood pressure =

(a) 0.3847 (b) 0.47178 (c) 0.52822 (d) 0.0024 (e) none of these

is 6- The expected value of the person that have high blood pressure

(a) 1.5 (b) 1.05 (c) 0.0247 (d) 0.70 (e) none of these

Person with high blood pressure is 7- The standard deviation of the

(a) 1.5 (b) 1.05 (c) 1.024 (d) 0.70 (e) none of these

8- The variance of the person that has high blood pressure is

(a) 1.05 (b) 1.5 (c) 1.02 (d) 1.2 (e) none of these

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9- The normal distribution is symmetrical about:

(a) 0 (b) its variance (c) its mean (d) 1 (e) none of these

**(\*) If Z has the standard normal distribution, then**

10- P(Z= -1.34) =

(a) 0.0764 (b) 0.9099 (c) 0 (d) 0.0901 (e) none of these

11- P(Z < 2.33 ) =

(a) 0.0006 (b) 0.9994 (c) 0.9901 (d) 0.0099 (e) none of these

**(\*\*) Given a standard normal distribution, then the area under the curve which lies**

12- To the right of z = -0.89 is

(a) 0.8133 (b) 0.1867 (c) 0.8365 (d) 0.8103 (e) none of these

13- Between z = -0.48 and z =1.73 is

(a) 0.6435 (b) 0.9582 (c) 0.6426 (d) 0.3156 (e) none of these

\*\* Find the value of k which satisfies the following probabilities

14- P(Z > k)= 0.3632

(a) 0.35 (b) -0.35 (c) 0.53 (d) 0 (e) none of these

15- P(k <Z< 2.58)= 0.8876

(a) 1.24 (b) -1.24 (c) 0.10 (d) 0.9951 (e) none of these

**\* If X has the uniform distribution**



Then

16- 

a) 0.5125 b) 0.7143 c) 0.720 d) 0.360 e) none of these

17- The mean is

a) 4.0 b) 4.47 c) 8 d) 3.360 e) none of these

\* If Y is a random variable has mean 10 and variance 4, then

18-The expected value of  is.

a) 20 b) 4 c) 18 d) 10 e) none of these

19- The standard deviation of  is.

a) 14 b) 4 c) 8 d) 16 e) none of these

\* Suppose the probability function of the random variable Y is given by



20- The expected value of Z= 2y+3 is

a) 2.4 b) 0.4 c) 0.6 d) 3 e) none of these

21- The variance of Z=2(y-4)

a) 2.4 b) 0.4 c) 0.6 d) 3 e) none of these

22- the parameters of binomial distribution are

a) n,q b) n,p c) d) n, e) none of these