KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
MATHEMATICS DEPARTMENT

STAT 211 BUSINESS STATISTICS II
Semester 211, First Exam
Tuesday October 5, 2021

Name: _____ ID #:_____

😊 Important Note:

- Formula sheet will be provided to you in exam. You are not allowed to bring, with you, formula sheet or any other printed/written paper.
- Mobiles are not allowed in exam. If you have your mobile with you, turn it off and put it under your seat so that it is visible to proctor.
- Make sure you have 9 unique pages of exam paper (including this title page).

The Human Resources Director of a large corporation wishes to develop an employee benefits package and decides to select 500 employees from a list of all 40,000 workers in order to study their preferences for the various components of a potential package. In this study,

based on the above information, solve the next **4** questions

1. Methods that result in decisions concerning population characteristics based only on the sample results are called

     a. Statistical Inference
     b. Population
     c. Sample
     d. Parameter
     e. Statistic

2. All the employees in the corporation constitute the

     a. Population
     b. Sample
     c. Parameter
     d. Statistic
     e. Statistical Inference

3. The 500 employees who will participate in this study constitute the

     a. Sample
     b. Population
     c. Parameter
     d. Statistic
     e. Statistical Inference

4. the average bonus received by 40,000 employees is

     a. Parameter
     b. Sample
     c. Population
     d. Statistic
     e. Statistical Inference

5. The measure of location which is most likely to be affected by extreme values in the data set is the
    a. mean only
    b. range only
    c. median
    d. mean and the range
    e. mode

The human resources department at a high-tech company recently conducted an employee satisfaction survey of 100 of its 3,000 employees. Data were collected on such variables as age, gender, marital status, current salary, level of overall satisfaction on a scale from 1 to 5, number of years with the company, and job title

based on the above information, solve the next **3** questions

6. Which of the variables listed are considered to be of ratio level data?

    a. The age, the salary and years with the company
    b. Only the age
    c. Only the gender
    d. The gender, marital status and the job title
    e. Job satisfaction

7. Which of the variables would be classified as nominal level data?

    a. The gender, marital status and the job title
    b. The age, the salary and years with the company
    c. Only the age
    d. Only the gender
    e. Job satisfaction

8. Which of the variables would be considered to be ordinal data?

    a. The job satisfaction
    b. The gender, marital status and the job title
    c. The age, the salary and years with the company
    d. Only the age
    e. Only the gender

9. The table below contains the opinion of a sample of people (categorized by gender) about plans to change the business policies in KSA.

	Favor	Neutral	Against
Female	33	58	10
Male	12	31	48

What percent of the females are not in favor of changing the business policies in KSA?
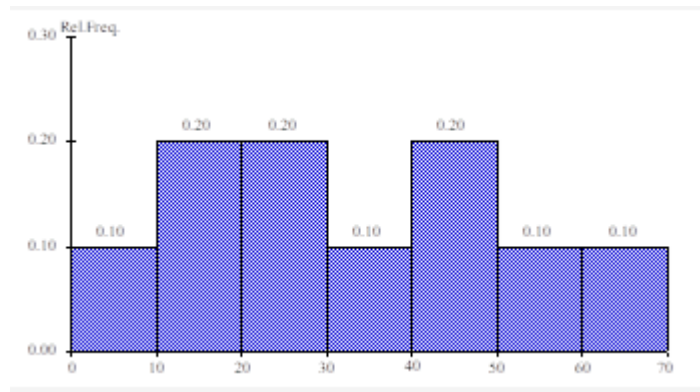
    a. 67.33%
    b. 34.42%
    c. 32.67%
    d. 64.59%
    e. 50%

10. The weights of a sample of 15 male students (in pounds) in Prep-Year KFUPM are

    138   161   158   156   147   163   182   144   171   124   135   161   161   175   158

with mean 155.6 and standard deviation 15.597. Assuming the data are bell-shaped, approximately what percentage of students' weights in Prep-Year are between 140.003 and 171.197 pounds?

    a. 68%
    b. 95%
    c. 99.75%
    d. 66.67%
    e. 33.33%

11. A survey of 150 executives were asked what they think is the most common mistake candidates make during job interviews. Six different types of mistakes were given. Which of the following is the best for presenting the information?

    a. A bar chart
    b. A histogram
    c. An ogive
    d. A stem and leaf plot
    e. A Contingency table

The histogram below represents scores achieved by 200 job applicants on a personality profile

based on the above information, solve the next **3** questions

12. The number of job applicants who scored between 30 and below 60 is

       a. 80
       b. 100
       c. 120
       d. 40
       e. 160

13. _____percent of the applicants scored below 20 or at least 50.

       a. 50%
       b. 20%
       c. 40%
       d. 60%
       e. 80%

14. The estimated average scores achieved by the job applicants is equal to _____

       a. 33
       b. 28.8
       c. 942.86
       d. 1070
       e. 64.2

A sociologist recently conducted a survey of citizens over 60 years of age whose net worth is too high to qualify for Medicaid. The ages of sampled senior citizens were as follows:

66   70   70   71   71   72   72   75   77   78   78   81   82   87   90

based on the above information, solve the next **5** questions

15. Estimate the average of the ages of the senior citizens.

   a. 76
   b. 74
   c. 72
   d. 73
   e. 75

16. Estimate the standard deviation of the ages of the senior citizens.

   a. 6.772
   b. 6.452
   c. 46.72
   d. 45.86
   e. 21.07

17. Estimate the Interquartile range of the ages of the senior citizens.

   a. 10
   b. 9
   c. 8
   d. 9.5
   e. 10.5

18. The z-score of the median of the ages of the senior citizens is equal to

   a. -0.148
   b. -0.732
   c. 0.148
   d. -0.153
   e. 0.153

19. Using the mean, the median and the mode, the ages of the senior citizens is

   a. Skewed to the right
   b. Skewed to the left
   c. Symmetric
   d. Bell shaped
   e. We cannot tell

The probability that a visit to a primary care physicians (PCP) office results in neither lab work nor referral to a specialist is 35%. Of those coming to a PCPs office, 30% are referred to specialists and 50% require lab work.

based on the above information, solve the next **2** questions

20. Determine the probability that a visit to a PCPs office results in both lab work and referral to a specialist.

      a. 0.15
      b. 0.30
      c. 0.20
      d. 0.05
      e. 0

21. Determine the probability that a visit to a PCPs office results in one of the two actions and not the other.

      a. 0.5
      b. 0.2
      c. 0.4
      d. 0.7
      e. 0.8

22. A survey of 1000 people determines that 75% like walking and 65% like biking, and all like at least one of the two activities. What is the probability that a randomly chosen person in this survey likes biking but not walking?

      a. 0.25
      b. 0.35
      c. 0.7
      d. 0.65
      e. 0.75

23. A certain type of new business succeeds 34% of the time. Suppose that 5 such businesses open (where they do not compete with each other, so it is reasonable to believe that their relative successes would be independent). The probability that at least 1 business succeeds is

      a. 0.87
      b. 0.99
      c. 0.13
      d. 0
      e. 0.34

An   insurance   company   issues   life   insurance   policies   in   three   separate categories: **standard**, **preferred**, and **ultra-preferred**. Of the company's policyholders, 53% are standard and 33% are preferred. Each standard policyholder has probability 0.02 of dying in the next year, each preferred policyholder has probability 0.003 of dying in the next year, and each ultra-preferred policyholder has probability 0.002 of dying in the next year

based on the above information, solve the next **2** questions

24. What is the probability that a policyholder dies next year?

   a. 0.01187
   b. 0.0233
   c. 0.00233
   d. 0.00847
   e. 0.01099

25. If a policyholder dies next year, what is the probability that the deceased policyholder was ultra-preferred?

   a. 0.0236
   b. 0.1202
   c. 0.0331
   d. 0.0577
   e. 0.0135