

**KING FAHD UNIVERSITY OF PETROLEUM & MINERALS, DHAHRAN, SAUDI ARABIA**  
**DEPARTMENT OF MATHEMATICS**

**STAT 201: Introduction to Statistics**

Term 211, First Major Exam, Saturday October 09, 2021, 03:30 PM

Name: \_\_\_\_\_ ID #: \_\_\_\_\_

Please mark the correct answer to each of the questions by completely darkening the circle of your choice with a dark pen or pencil.

**MULTIPLE CHOICE:**

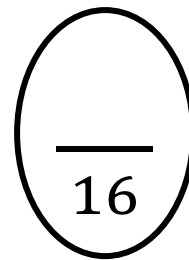
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
Q.No.1: -	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q.No.2: -	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q.No.3: -	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q.No.4: -	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q.No.5: -	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q.No.6: -	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q.No.7: -	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q.No.8: -	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**MULTIPLE CHOICE:**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
Q.No.9: -	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q.No.10: -	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q.No.11: -	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q.No.12: -	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q.No.13: -	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q.No.14: -	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q.No.15: -	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q.No.16: -	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Code: 00

Score:  $\frac{\quad}{16}$



**Instructions:**

1. Formula sheet is attached at the end of this exam. You are not allowed to bring with you, formula sheet or any other printed/written paper.
2. Mobiles are not allowed in exam. If you have your mobile with you, turn it off and keep it under your seat so that it is visible to proctor. Your mobile(s) should not be in your pocket during the exam.
3. The answers are rounded. If the exact answer is not there in any of the 5 choices, then pick the one that you think is closest to correct answer.
4. Make sure you have 12 unique pages of exam paper (including this title page.)



Q1: A sales manager has seven sales representatives. The following are the number of Xerox copier machines sold by these sales representatives during the past week: {5, 7, 12, 13, 6, 2, 4}. Based on the data, the mean number of machines sold was:

- A. 7
- B. 6
- C. 8
- D. 9
- E. 10

Q2: When students are asked to list their age at the time they got admission in KFUPM, the type of data being collected is

- A. **Ratio Scale**
- B. Nominal Scale
- C. Ordinal Scale
- D. Interval Scale
- E. Likert Scale

Q3: When the park ranger at Yellowstone National Park reports the average length of time that 32 visitors spend in the park today, he is using

- A. **descriptive statistics.**
- B. histogram.
- C. inferential statistics.
- D. bar charts.
- E. stem and leaf plot.

Q4: A tire store manager has collected data showing the number of tires of each brand sold during the past month. Which of the following is the most effective in graphically illustrating which brands tend to sell best at this store?

- A. **Pareto chart**
- B. Histogram
- C. Time series chart
- D. Stem and leaf plot
- E. Scatter plot

Q5: Which of the following statements about histogram is **correct**?

- A. **The height of rectangles (bars) is proportional to frequency of the classes**
- B. There are generally five rectangles (bars) in each histogram
- C. The area in a rectangle (bar) is equal to the frequency of that class multiplied by the frequency of previous class.
- D. The area in a rectangle (bar) is equal to the frequency of that class multiplied by the lowest frequency.
- E. Classes with smaller frequencies can be merged together.

Q6: The Community Center manager has collected data on the number of visits to the community center each week for the past 8 weeks. These data are shown as follows:

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
115	123	134	179	202	256	251	299

Which of the following statements is *most correct*?

- A. A frequency polygon for these data will show that an upward trend in the number of visits to the club has occurred over the past 8 weeks.
- B. A scatter plot will illustrate whether a linear relationship exists between the number of visits and the week number.
- C. A stem and leaf would be useful for displaying these data.
- D. The proper graph for displaying these data is a pie chart.
- E. A histogram can best describe the week with highest number of visitors.

Q7: The time in minutes that forty workers needed to assemble computers were registered. The following frequency distribution was obtained.

Class limits	$f$
[20 – 25)	3
[25 – 30)	21
[30 – 35)	12
[35 – 40)	6
[40 – 45)	2
[45 – 50)	1
Total	45

Find the percentage of workers that need at least 35 minutes to assemble the computer.

- A. 20%
- B. 27%
- C. 22%
- D. 78%
- E. 87%

Q8: Consider the following data on single-leg power at a high workload.

244 191 160 187 180 176 174 205 211 183

Find the sample median.

- A. 185
- B. 180
- C. 187
- D. 174
- E. 183

Q9: For a dataset, the sample mean is 50.2 and the sample median is 77.3. Which of the following statements is true about this dataset.

- A. **The data are negatively skewed**
- B. The data are positively skewed
- C. The data are symmetric
- D. The data are skewed to right
- E. None of the others.

Q10: Data are collected on weight (in pounds) of 200 members of health club and it is found that the histogram of the data is very close to a bell shape. Moreover, the sample mean is 160 pounds and the sample standard deviation is 10 pounds. Out of 200 club members, how many are expected to have their weight between 140 and 180 pounds?

- A. **190**
- B. 199
- C. 180
- D. 195
- E. 170

Q11: The ages of 6 children at a day care center are 3, 5, 6, 4, 2 and 4. For measuring the dispersion in data, calculate the mean absolute deviation.

- A. **1**
- B. 0
- C. 2
- D. 3
- E. 4

Q12: For the data on the weights of male health club members, it was found out that the first quartile  $Q_1=142$  pounds and median  $Q_2=154$  pounds. The third quartile  $Q_3$

- A. **cannot be found from the given information.**
- B. is equal to 166
- C. is less than 154
- D. is greater than 270
- E. is equal to 171

Q13: Welds of tubular joints can have two types of defects, which we call A and B. Each weld produced has defect A with probability 0.064, defect B with probability 0.043, and both defects with probability 0.025. Find the proportion of welds that have neither defect.

- A. **0.918**
- B. 0.082
- C. 0.975
- D. 0.936
- E. 0.957

Q14: A student of STAT201 estimates that his chances of getting A+ grade: in first major exam are 0.6; in second major exam are 0.55; in both major exams are 0.4. Find the probability that the student gets A+ in first major exam or second major exam.

- A. **0.75**
- B. 0.80
- C. 0.20
- D. 0.85
- E. 0.60

Q15: A child has 12 shirts in a drawer; 5 are red, 4 are blue, and 3 are green. If 2 shirts are chosen at random, find the probability that they are both blue.

- A. **0.09**
- B. 0.29
- C. 0.15
- D. 0.045
- E. 1

Q16: From the past experience, it has been determined that 10% of all cars tested emit excessive hydrocarbons, 8% emit excessive CO, and 6% emit excessive amount of both. What is the probability that a randomly selected car emits excessive CO given that it is emitting excessive hydrocarbons.

- A. **0.6**
- B. 0.67
- C. 0.75
- D. 0.06
- E. 0.08