

**Department of Statistics
& Operations Research**
College of Science, King Saud University

STAT 145
Test I
Semester I, 1432 – 1433 H

Student Name:			
Student Number:		Section Number:	
Teacher Name:		Attendance Number	

- Mobile Telephones are not allowed in the classrooms.
- Time allowed is 90 minutes
- Answer all questions.
- Choose the nearest number to your answer.
- **WARNING:** Do not copy answers from your neighbours. They have different questions forms.
- For each question, **put the code in capital letter** of the correct answer, in the following table, beneath the question number:

1	2	3	4	5	6	7	8	9	10
B	C	A	B	D	D	C	B	C	C

11	12	13	14	15	16	17	18	19	20
A	A	D	D	B	B	C	A	B	A

21	22	23	24	25
C	A	D	D	B

QUESTIONS 1 - 2

From men with age more than 20 years living in Qaseem, we select 200 men. It was found that the average weight of the men was 76 kg.

Q. 1 The variable of interest is:

(A) Age	(B) weight	(C) 200 men	(D) 76 kg
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Q. 2 The sample size is:

(A) 76	(B) 20	(C) 200	(D) 1520
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QUESTIONS 3 - 8

Fill in the table given below. Answer the following questions.

Class Interval	Frequency	Cumulative Frequency	Relative Frequency	Cumulative Relative Frequency
5 - 9	8			
10 - 14	15		C	
15 - 19	11	B		D
20 - 24	A	40	0.15	

Q. 3 The value of A is:

(A) 6	(B) 4	(C) 34	(D) 40
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Q. 4 The value of B is:

(A) 40	(B) 34	(C) 0.85	(D) 0.275
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Q. 5 The value of C is:

(A) 23	(B) 0.575	(C) 0.275	(D) 0.375
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Q. 6 The value of D is:

(A) 0.375	(B) 34	(C) 0.8	(D) 0.85
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Q. 7 The true class interval for the first class is:

(A) 5 - 9	(B) 5 - 10	(C) 4.5 - 9.5	(D) 5.5 - 9.5
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Q. 8 The percentage of observations less than 19.5 is:

(A) 34	(B) 85	(C) 1	(D) 6
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QUESTIONS 9 -14

Temperature (in Farahreniet) recorded at 2 am in London on 8 days randomly chosen in a year were as follows:

40 -21 38 -9 26 -21 -49 44

Q. 9 The average temperature for the sample is:

(A) 248	(B) 1	(C) 6	(D) 48
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Q. 10 The median temperature for the sample is:

(A) 17	(B) -21	(C) 8.5	(D) -8.5
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Q. 11 The mode of temperature for the sample is:

(A) -21	(B) 44	(C) 2	(D) -49
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Q. 12 The standard deviation for the sample data is:

(A) 35.319	(B) 30.904	(C) 1247.43	(D) 4
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Q. 13 The coefficient of variation for the sample is:

(A) 49%	(B) 17%	(C) 4%	(D) 588.7%
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Q. 14 The range of the sample is:

(A) 4	(B) 8	(C) 40	(D) 93
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QUESTIONS 15 – 19

Gender	Diabetics (D)	Not Diabetic (D ^c)	TOTAL
Male (M)	72	288	360
Female (F)	48	192	240
TOTAL	120	480	600

Consider the information given in the table above. A person is selected randomly from 600 people.

Q. 15 The probability that the person found is male and diabetic is:

(A) 72	(B) 0.12	(C) 0.60	(D) 0.67
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Q. 16 The probability that the person found is male or diabetic is:

(A) 0.12	(B) 0.68	(C) 0.60	(D) 0.97
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Q. 17 The probability that the person found is female is:

(A) 0.24	(B) 0.12	(C) 0.40	(D) 0.5
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Q. 18 Suppose we know the person found is a male, the probability that he is diabetic, is:

(A) 0.2	(B) 0.12	(C) 0.40	(D) 0.68
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Q. 19 The events M and D are:

(A) Disjoint	(B) Independent	(C) mutually exclusive	(D) Dependent
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QUESTIONS 20 - 21

Suppose that 5 % of the people in a population have cancer and 20% of all the people are poor. Suppose that two events (cancer and being poor) are independent. A person is selected at random from the population.

Q. 20 The probability that the person selected is r poor and has a cancer, is:

(A) 0.01	(B) 0.10	(C) 0.24	(D) 0.25
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Q. 21 The probability that the person selected is either poor or has a cancer, is:

(A) 0.01	(B) 0.10	(C) 0.24	(D) 0.25
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QUESTIONS 22-25

It is known that 40% of the population is diabetic. 330 persons who were diabetics went through a test where the test confirmed the disease for 288 persons. Among 270 healthy persons, test showed high sugar level for 22 persons. The information obtained is given in the table below.

Answer the following Questions.

Test	Diabetics (D)	Not Diabetic (D^c)	TOTAL
Positive (T)	288	72	360
Negative (\bar{T})	42	198	240
TOTAL	330	270	600

Q. 22 The sensitivity of the test is:

(A) 0.873	(B) 0.480	(C) 0.733	(D) 0.33
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Q. 23 The specificity of the test is:

(A) 0.873	(B) 0.330	(C) 0.48	(D) 0.733
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Q. 24 The probability of false positive is:

(A) 0.1549	(B) 0.127	(C) 0.713	(D) 0.267
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Q. 25 The predictive probability positive for the disease is:

(A) 0.686	(B) 0.800	(C) 0.480	(D) 0.873
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