Student's Name (In Arabic):		Section's Number:	
Student's Number		Attendance number:	
Teacher's Name			

- There are 30 multiple choice questions.

- Time allowed is 90 minutes. (1.5 Hour).

- Answer all questions.

- Choose the nearest number to your answer.

- Mobile telephones are not allowed in the classrooms.

- WARNING: Do not copy answers from your neighbors. They have different question forms.

- For each question, put the code of the correct answer in the following table beneath the question number.

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

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

21	22	23	24	25	26	27	28	29	30
B	B	A	A	D	B	C	B	C	B

Total Degree:	

Q. 1 - 6 ▸▸ ▸▸ The following table gives the distribution of the ages of a sample of 50 patients who attend a dental clinic.

Age intervals (in years)	Frequency	Relative frequency		Less than	Cumulative Frequency
10 - 15	4	-		10	0
16 - 21	8	-		16	4
22 - 27	z	0.32		22	y
28 - 33	-	-		28	--
34 - 39	10	-		34	--
				40	x

1.	The class width is:								
	(A)	6	(B)	10	(C)	150	(D)	19	
2.	The value of x is:								
	(A)	22	(B)	28	(C)	50	(D)	10	
3.	The value of y is:								
	(A)	4	(B)	12	(C)	19	(D)	150	
4.	The value of z is:								
	(A)	14	(B)	12	(C)	50	(D)	16	
5.	Percent of the patients with age between 16 and 21 is:								
	(A)	16%	(B)	8%	(C)	20%	(D)	32%	
6.	The 5th interval midpoint is:								
	(A)	38	(B)	52	(C)	27	(D)	36.5	

Q. 7- 13 ▸▸ ▸▸ The following table classifies a sample of individuals according to gender and period of time (in years) attendance in the college:

College Attended	Gender		
	Male	Female	Total
None	12	41	53
Two Years	14	63	77
Three Years	9	49	58
Four Years	7	50	57
Total	42	203	245

Suppose we select an individual at random, then:

7.	The probability that the individual is male is:								
	(A)	0.8286	(B)	0.1714	(C)	0.0490	(D)	0.2857	
8.	The probability that the individual did not attend college (None) and female is:								
	(A)	0.0241	(B)	0.0490	(C)	0.1673	(D)	0.2163	
9.	The probability that the individual has three year or two year college attendance is:								
	(A)	0.551	(B)	0.0939	(C)	0.4571	(D)	0	
10.	If we pick an individual at random and found that he had three year college attendance, the probability that the individual is male is:								
	(A)	0.0367	(B)	0.2143	(C)	0.1552	(D)	0.1714	

11.	The probability that the individual is not a four year college attendance is:							
	(A)	0.7673	(B)	0.2327	(C)	0.0286	(D)	0.1429

12.	The probability that the individual is a two year college attendance or male is:							
	(A)	0.0571	(B)	0.8858	(C)	0.2571	(D)	0.4286

13.	The events: the individual is a four year college attendance and male are:							
	(A)	Mutually exclusive	(B)	Independent	(C)	Dependent	(D)	None of these

Q. 14- 19 ▸▸ ▸▸ Suppose that the ministry of health intends to check the reliability of the central Diabetic Lab in Riyadh. A sample persons with Diabetic disease (D) and another without the disease ($\bar{D}$) had the Lab tests and the results are given below:

	Present (D)	Absence ($\bar{D}$)
Positive (T)	950	40
Negative ($\bar{T}$)	25	640

Then:

14	The probability of false negative result is:							
	(A)	0.0256	(B)	0.9412	(C)	0.9744	(D)	0.0588

15	The probability of false positive result is:							
	(A)	0.0256	(B)	0.9412	(C)	0.9744	(D)	0.0588

16	The sensitivity of the test is:							
	(A)	0.0256	(B)	0.9412	(C)	0.9744	(D)	0.0588

17	The specificity of the test is:							
	(A)	0.0256	(B)	0.9412	(C)	0.9744	(D)	0.0588

Assume that the true percentage of Diabetic patients in Riyadh is 25%. then

18	The predictive value positive of the test is:							
	(A)	0.847	(B)	0.924	(C)	0.991	(D)	0.695

19	The predictive value negative of the test is:							
	(A)	0.195	(B)	0.982	(C)	0.847	(D)	0.991

Q. 20- 24 ▸▸ ▸▸ Answer the following:

20	The biggest advantage of the standard deviation over the variance is:	
	(A)	The standard deviation is always greater than the variance.
	(B)	The standard deviation is calculated with the median instead of the mean.
	(C)	The standard deviation is better for describing the qualitative data.
	(D)	The standard deviation has the same units as the original data.
21	Parameters and statistics:	
	(A)	Describe the same group of individuals.
	(B)	Describe the population and the sample, respectively.
	(C)	Describe the sample and the population, respectively.
	(D)	None of these.
22.	Which of the following location (central tendency) measures is affected by extreme values?	
	(A)	Median
	(B)	Mean
	(C)	Variance
	(D)	Range

23.	Which of the following measures can be used for the blood type in a given sample?	
	(A)	Mode
	(B)	Mean
	(C)	Variance
	(D)	Range

24.	If x_1, x_2 and x_3 has mean $\bar{x} = 4$, then x_1, x_2, x_3 and $x_4=4$ has mean:							
	(A)	equal 4	(B)	less than 4	(C)	greater than 4	(D)	None of this

Q. 25- 30 ▸▸ ▸▸ suppose that we have a random sample of 12 observations as given in the following: 9,   6,   7,   15, 10,   12,   16,   9,   5,   11.
Then:

25.	The median is:							
	(A)	10.5	(B)	15	(C)	12.5	(D)	9.5
26.	The range is:							
	(A)	10	(B)	11	(C)	15	(D)	5
27.	The mean is:							
	(A)	15	(B)	9.5	(C)	10	(D)	12.5
28.	The standard deviation is:							
	(A)	4.63	(B)	3.62	(C)	8.72	(D)	9.31
29.	The mode is:							
	(A)	10	(B)	15	(C)	9	(D)	No mode
30.	The coefficient of variation (C.V.) is:							
	(A)	232.7%	(B)	36.21%	(C)	213.24%	(D)	39.59%

End of the Exam --- Good Luck