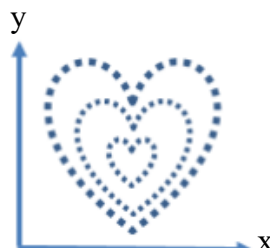


أولاً : الأسئلة الموضوعية (الاختيار من متعدد) "كل سؤال درجة واحدة"

(1)	If Z is a standard normal variable, then $P(Z \leq 3) = \dots + P(-3 \leq Z \leq 0)$			
(a)	0.3	(b)	0.5	(c) 1
		(d)	0	

(2)	If A and B are two events of the sample space of a random experiment, such that $A \cap B = \emptyset$, $P(A) = 0.65$ and $P(B) = 0.32$, then $P(A \cup B) = \dots$			
(a)	0.97	(b)	0.33	(c) 0.03
		(d)	0.67	

(3)	If the two points (15,12) and (9,6) lie on the line of regression of y on x, then the correlation between x and y is			
(a)	Perfect direct	(b)	Perfect inverse	(c) Direct
		(d)	Inverse	

(4)	From the opposite scatter diagram: The correlation between x and y is 			
(a)	Inverse	(b)	Nihilistic	(c) Direct
		(d)	Perfect inverse	

(5)	From the opposite diagram:				Stem	Leaves		
	The median =				1	0	2	3
					2	4	6	8
					3	1	3	7
					Key: 2 6 =2.6			
(a)	26	(b)	6	(c)	0.6	(d)	2.6	

(6)	If the upper limit of a confidence interval of a sample mean equals 26.96 with a confidence level of 95%, and the arithmetic mean of the sample is equal to 25, then the estimation error is			
(a)	0.49	(b)	0.98	(c) 1.96
		(d)	4.9	

(7) If Z is a standard normal variable where $P(-m \leq Z \leq 0) = 0.2088$, then the value of the real number $m = \dots\dots\dots$

- (a) 0.55 (b) 0.45 (c) 1.5 (d) 0.35

(8) If A and B are two events of the sample space of a random experiment, such that $A \cap B = \frac{3}{8}$, then the probability of occurrence of one of the two events at most =

- (a) $\frac{7}{8}$ (b) $\frac{5}{8}$ (c) $\frac{1}{8}$ (d) $\frac{1}{2}$

(9) From the opposite diagram:
The semi-interquartile range
=

Stem	Leaves			
3	0	1	2	4
5	1	3	4	7
6	5	6	9	

Key: $5 \mid 7 = 57$

- (a) 65 (b) 53 (c) 32.5 (d) 16.5

(10) If X is a normal random variable whose mean 15 and standard deviation 5, then $P(X \geq 25) = \dots\dots\dots$

- (a) 0.4772 (b) 0.9772 (c) 0.0228 (d) 0.5

ثانياً : الأسئلة الموضوعية (الاختيار من متعدد) "كل سؤال درجتان"

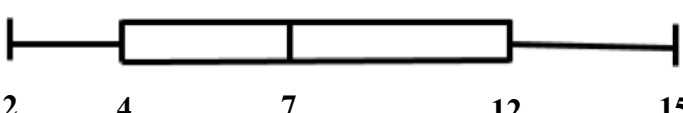
(11) If X is a continuous random variable, its density function is:

$$f(x) = \begin{cases} \frac{3x+1}{40}, & 1 \leq x \leq 5 \\ 0, & \text{otherwise} \end{cases}$$

and if $a \in [1,5]$, then $P(a \leq X \leq a+2) = \frac{7}{20}$, then $a = \dots\dots\dots$

- (a) 1 (b) 2 (c) 3 (d) 4

(12)	From the following frequency table:						
	Sets	4-	7-	10-	13-	16-	19-
	Frequency	4	6	11	8	5	1
Q ₃ =							
(a)	$\frac{75}{8}$	(b)	$\frac{479}{32}$	(c)	$\frac{265}{22}$	(d)	$\frac{179}{64}$
(13)	In a statistical study, the variance equals 625, the estimation error is $\frac{49}{9}$, then the sample size at a confidence level 95% equals						
(a)	9	(b)	12	(c)	81	(d)	144
(14)	If the equation of regression line of y on x is $\hat{y} = 0.6x + 4$, then the expected value of y at x = 15 is						
(a)	9	(b)	13	(c)	4	(d)	10
(15)	If X is a discrete random variable whose range {-1, 0, 1, 2} and if f(-1) = f(2) = 0.3, then f(1) + f(0) =						
(a)	0.7	(b)	0.6	(c)	0.5	(d)	0.4
(16)	From the opposite diagram: The lower quartile =				Stem	Leaves	
					3	1	7
					4	2	4
	5	8	9				
				Key: 5 8 = 58			
(a)	37	(b)	44	(c)	58	(d)	31
(17)	A sample of size 100, with arithmetic mean 15.5 and standard deviation 14, using the confidence level of 95%, then the confidence interval is						
(a)	]12.756,18.244[	(b)	]13.134,17.866[	(c)	]13.798,17.202[	(d)	]14.293,16.707[

(18)	In a random experiment of tossing a regular die one time and observing the appearing number on the upper face, then the probability of appearing a prime number knowing that the appearing number is an even number is							
(a)	$\frac{2}{3}$	(b)	$\frac{1}{2}$	(c)	$\frac{1}{3}$	(d)	$\frac{1}{6}$	
(19)	In a study of the relation between two variables x, y if the number of each variable is n , if $\sum x = 36$, $\sum y = 60$, $\sum x y = 180$, and the relation between x and y is nihilistic, then $n = \dots\dots\dots$							
(a)	6	(b)	8	(c)	10	(d)	12	
(20)	In a study of the relation between two variables x, y if: $\sum x = 120$, $\sum y = 100$, $\sum x^2 = 720$, $\sum x y = 516$, $n = 40$, then the coefficient of regression of y on $x = \dots\dots\dots$							
(a)	0.4	(b)	0.6	(c)	0.8	(d)	1	
(21)	from the opposite box plot: the semi-interquartile range =..... 							
(a)		(b)		(c)		(d)		
(22)	A bag contains 10 red balls and 6 blue balls. If two balls are drawn one after the other (without replacement), then the probability that the second ball is a red ball, given that the first ball is a red ball =							
(a)	$\frac{3}{5}$	(b)	$\frac{5}{8}$	(c)	$\frac{3}{8}$	(d)	$\frac{2}{5}$	

From the following table:

(23)	x	7	7	8	3	7	11
	y	8	4	12	2	10	11

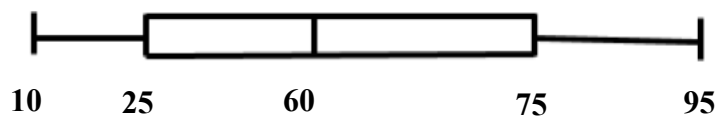
The Spearman's correlation coefficient between x and y =

(a)	$\frac{29}{35}$	(b)	$\frac{31}{35}$	(c)	$\frac{33}{35}$	(d)	1
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(24) If A and B are two independent events of a sample space of a random experiment, $P(A) = 0.7$ and $P(B) = 0.4$, then $P(B - A) = \dots\dots\dots$

(a)	0.09	(b)	0.21	(c)	0.9	(d)	0.12
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(25) The opposite box plot represents the marks of students of a class in Arabic subject.
then the second quartile =



(a)	10	(b)	25	(c)	60	(d)	95
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(26) If X is a discrete random variable whose expectation = 0.7, $\sum x_r^2 \times f(x_r) = 9.49$, then the variance equals

(a)	3	(b)	9	(c)	12	(d)	15
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(27) If the mean of a random variable equals 70, and the standard deviation equals 15, then the coefficient of variation =

(a)	$\frac{130}{7}$	(b)	$\frac{150}{7}$	(c)	$\frac{110}{7}$	(d)	$\frac{100}{7}$
-----	-----------------	-----	-----------------	-----	-----------------	-----	-----------------

(28) If the monthly income of 200 families is a random variable represents normal variable with expectation $\mu = 400$, standard deviation $\sigma = 80$ pounds, if a family is chosen at random from these families, then the probability of the monthly income of this family is 500 pounds at most =

- (a) 0.8944 (b) 0.3944 (c) 0.1056 (d) 0.4357

(29) If the equation of regression line of y on x is $\hat{y} = 0.2x + 3$, and the error in value of y is 1, then the table value at $x=10$ could be equals

- (a) 7 (b) 5 (c) 4 (d) 3

(30) From the opposite diagram:

Stem	Leaves
0	1 3 5
1	2 4
2	k 7 8
3	2 5 6

If the second quartile = 2.3

Then k =

Key: $1 | 4 = 1.4$

- (a) 0.3 (b) 0.2 (c) 2 (d) 3

(31) A coin is thrown two consecutive times and the upper face is observed, then the probability of getting two heads, given that the appearing face in the first toss is a head =

- (a) $\frac{1}{6}$ (b) $\frac{1}{3}$ (c) $\frac{1}{2}$ (d) $\frac{2}{3}$

(32) The probability that a seed is grow after agriculture is 0.7, a farmer plants 10 seeds, then the probability that 7 of them will grow $\simeq$

- (a) 0.2668 (b) 0.0022 (c) 0.8662 (d) 0.6682

(33) A factory produces a certain type of batteries, if the mean of the battery life is 2000 hour, the coefficient of variation of the battery = 15% , then the standard deviation of the battery life = hours

- (a) 200 (b) 300 (c) 400 (d) 500

ثالثاً: الأسئلة المقالية " كل سؤال درجتان "

(34) 100 students study in one of the educational institute for teaching languages, if the number of students studying English is 60 student, the number of students studying French is 50 student and the number of students the two languages together is 35 student. If a student is chosen at random, what is the probability that the chosen student study only one of the two languages.

(35) If the probability that a school get agree from the educational zone to organize a sport day in a club from the first trial is 0.3, if all trials are equally to happen, then what is the probability to get the agree from the third trial at least?