



**ADMISSION EXAM
VERSION B 1**

Each question has only one correct answer

Each correct answer = 3 points

Duration of the exam = 90 minutes

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Grid 1. The value under which there are located 75 percent of the observations is:

- a) the third quartile
- b) the first quartile
- c) the median
- d) the mean

Grid 2. Which of the following statements regarding the optimal stratified survey is true:

- a) The stratified structure of the sample must replicate the structure of the population
- b) The sub-sample sizes are calculated based on the coefficient of variation
- c) The representativity error cannot be calculated at the level of each stratum
- d) A stratum with a small size in the population but with greater dispersion compared to other strata will have a larger sample size than it would under proportional allocation

Grid 3. Relative frequencies of a nominal variable are best displayed using:

- a) a pie chart
- b) a histogram
- c) a scatter plot
- d) a line

Grid 4. The sample size is directly proportional to:

- a) Residual variance
- b) The average level of the estimator
- c) The probability with which the results are guaranteed
- d) The coefficient of determination

Grid 5. What is the name of the chart that uses the following for its representation: minimum value, first quartile, median, third quartile, and maximum value?

- a) cumulative frequency curve
- b) histogram
- c) box plot diagram
- d) scatter plot

Grid 6. A simple random survey was conducted among employees in the IT sector. The sample size was 2,500. The responses to the question "What impact does artificial intelligence have on your job in the IT field?" are summarized in the following table:



Response	Frequency
Significantly improves working conditions	700
I notice no change	1500
Puts the job at risk	300
Total	2500

Calculate the confidence interval, guaranteed with a probability of 95.45% ($z_{(1-\alpha/2)}=2$), for the proportion of respondents who believe that AI significantly improves working conditions is:

- a) 26.20% - 29.80%
- b) 18.36% - 21.96
- c) 27.10% - 28.90%
- d) 70.20% - 73.80%

Grid 7. The following data is known about the number of employees in three branches of a company in June 2022:

Branch	Number of employees
Branch 1	120
Branch 2	160
Branch 3	140
Total	420

The ascending cumulative absolute frequency of the second branch is:

- a) equal to 66.7%
- b) equal to 160 employees
- c) equal to 280 employees
- d) equal to 38.1%

Grid 8. A stratified survey is to be conducted among the clients of a bakery products company in the South-West development region. The information needed for sampling is as follows:

Stratum	Number of firms	Average turnover (billion Lei)	Variance
Urban	350	25	16
Rural	150	11	25

Determine the required sample size for a confidence level of 95% ($z_{(1-\alpha/2)}=1.96$) and a maximum allowable margin of error of $\pm 3\%$ of the average turnover:

- a) 436
- b) 135
- c) 94
- d) 184

Grid 9. Over the course of a year, an individual purchased 600 Euros at the following exchange rates:

Exchange rate (lei/Euro)	4.4	4.5	4.9
Euros purchased	200	300	100



According to the data in the table, the mean and the modal value are:

- a) 4.72 lei/Euro and 4.5 lei/Euro
- b) 4.53 lei/Euro and 4.5 lei/Euro
- c) 4.58 lei/Euro and 4.0 lei/Euro
- d) 4.0 lei/Euro and 4.9 lei/Euro

Grid 10. For a regression model of the form $y = a + bx$, if the value of b is less than zero ($b < 0$), then:

- a) There is no correlation between x and y
- b) There is an indirect (negative) correlation between x and y
- c) There is a direct (positive) correlation between x and y
- d) None of the above

Grid 11. The number of hours allocated weekly to individual study for 100 students enrolled in the undergraduate program "Economic Statistics" is:

Interval (hours)	12–14	14–16	16–18	18–20	20–22
Number of students	10	20	40	20	10

According to the data presented, the mode and the average number of hours allocated weekly to individual study have the following values:

- a) 16 hours and 18 hours
- b) 17 hours and 17 hours
- c) 14 hours and 16 hours
- d) 18 hours and 20 hours

Grid 12. In a heteroskedastic model:

- a) the errors are constant
- b) the estimators are unbiased
- c) the estimators are efficient
- d) The variables are correlated

Grid 13. What does the mode represent in a dataset?

- a) the middle number
- b) the average number
- c) the number that appears most often
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Grid 14. Breusch-Pagan test implies running an auxiliary regression of:

- a) squared residuals
- b) absolute value of the residuals
- c) absolute value of the errors
- d) None of the above



Grid 15. In a time series, which of the following does *not* belong to the category of relative indicators?

- a) Average absolute change
- b) Index of dynamics
- c) Rate of dynamics
- d) Average index

Grid 16. What does the term "heteroskedasticity" refer to in econometrics?

- a) Unequal variance of error terms
- b) Perfect collinearity among independent variables
- c) Lack of independence among observations
- d) Presence of outliers in the data

Grid 17. Over five years, a team of statisticians completed 335 projects, as follows:

Year	2017	2018	2019	2020	2021
Number of projects	50	60	65	74	86

According to the data analysis, what was the average annual increase in the number of projects?

- a) 67 projects
- b) 114.52%
- c) 9 projects
- d) +14.52%

Grid 18. The following table shows the descriptives for sales and R&D expenditures of a sample of 95 firms:

	Sales (thousands lei)	R&D expenditures
Mean	350	50
Standard deviation	30	5

Covariance between the two variables is 90.

The Pearson's coefficient of correlation is:

- a) 0.6
- b) 0.25
- c) 0.75
- d) 1

Grid 19. In a time series, the average absolute change (average absolute increase) is calculated as:

- a) simple arithmetic mean of the absolute changes with a fixed base
- b) simple arithmetic mean of the absolute changes with a chain base
- c) simple harmonic mean of the changes with a chain base
- d) weighted arithmetic mean of the changes with a fixed base



Based on the data in the table, the group index of physical volume and the group index of prices is:

- a) 120.0% and 110.0%
- b) 132.0% and 120.0%
- c) 120.0% and 132.0%
- d) 1880 lei and 1128 lei

Grid 24. If the population density in a county is 100 inhabitants per km², the average distance between two inhabitants is:

- a) 0.10 km
- b) 0.12 km
- c) 0.20 km
- d) 1.20 km

Grid 25. At the level of three commercial units, the following data are known regarding:

- the value of revenues in the base period,
- the index of physical volume,
- the price index in the current period compared to the base period.

Commercial unit	Revenue in base period (mil. lei)	Quantity index	Price index
A	200	1.30	1.30
B	250	1.20	1.20

According to the data in the table, the absolute change in revenues in the current period compared to the base period is:

- a) 138 million lei
- b) 55.1%
- c) 24.4%
- d) 248 million lei

Grid 26. The following data are available for a county regarding the population and number of live births by area of residence in 2024:

Area of residence	Population (Pi)	Live births (Ni)
Urban	400500	4500
Rural	350500	3600

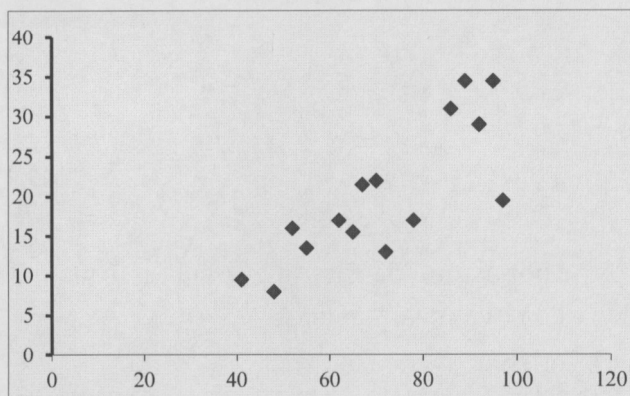
The crude birth rate and the contribution of each population category to the general birth rate in the county were:

- a) 10.8 live births per 1000 inhabitants, with contributions of 6.0 from urban and 4.8 from rural
- b) 12.7 live births per 1000 inhabitants, with contributions of 8.1 from urban and 4.6 from rural
- c) 10.6 live births per 1000 inhabitants, with contributions of 6.1 from urban and 4.5 from rural
- d) 15.3 live births per 1000 inhabitants, with contributions of 9.1 from urban and 6.2 from rural



Grid 20. The following scatter plot diagram is given. For a simple regression model, what are the most likely values for the intercept b_0 and slope b_1 ?

- a) $b_0 = -20$ and $b_1 = 0$
- b) $b_0 = 0$ and $b_1 = -2$
- c) $b_0 = -20$ and $b_1 = 0.5$
- d) $b_0 = 20$ and $b_1 = -2$



Grid 21. For a time series, the trend was estimated using the analytical method, resulting in the following equation: $\hat{Y}_t = 100 + 0.01 \cdot t$

Specify which of the following statements is correct:

- a) The series is stationary and follows an ARMA process
- b) The cyclical component is equal to 100
- c) The series shows an upward trend
- d) The seasonal component is 0.01

Grid 22. For the following sample of 8 counties, a researcher has collected data on the unemployment rates and GDP/capita.

Counties	GDP/capita	Unemployment Rate
Arad	27.22	3.50
Bihor	21.58	4.20
Botosani	12.99	4.00
Bucharest	69.06	2.00
Cluj	32.52	3.80
Ilfov	43.63	1.60
Maramures	17.11	4.10
Timis	39.65	1.90

The Spearman's coefficient for correlation is:

- a) -0.785
- b) -0.809
- c) -0.975
- d) 0.975

Grid 23. At a commercial company, the following data were recorded for two consecutive periods:

Product	Quantities sold (units)		Unit price (lei/unit)	
	Base period	Current period	Base period	Current period
A	50	60	80	88
B	60	72	90	99



Grid 27. In the case of a survey, the inferential statistical analysis stage is:

- a) An optional stage, because descriptive analysis provides us with sufficient information;
- b) The stage in which population parameters are estimated based on a probabilistically guaranteed confidence interval;
- c) The stage in which data is collected and estimators are calculated;
- d) A necessary stage only if the survey is online, in order to increase the representativeness of the sample.

Grid 28. A population (age) pyramid with a narrow base and a wider top is characteristic of:

- a) Aged populations
- b) Small countries
- c) Young and growing populations
- d) Regions with demographic increase

Grid 29. The existence of nonresponses leads to:

- a) A decrease in representativity error by reducing the sample size
- b) Biased estimators because nonrespondents may form a distinct group with different characteristics
- c) An increase in observation errors
- d) An increase in representativity errors caused by coverage area issues

Grid 30. In which case is a sex ratio above 1 (more than 100 males per 100 females) considered demographically normal?

- a) In the 0–1 age group
- b) In the rural population
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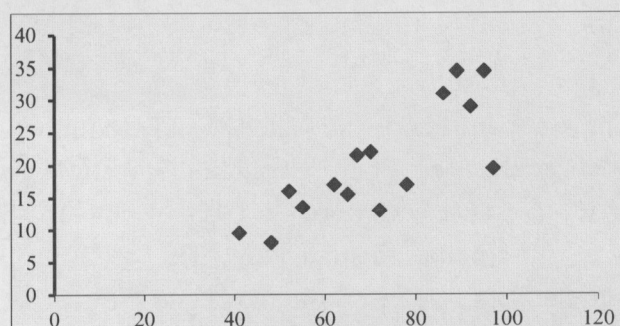
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Grid 25. A stratified survey is to be conducted among the clients of a bakery products company in the South-West development region. The information needed for sampling is as follows:

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ADMISSION EXAM
VERSION B 3

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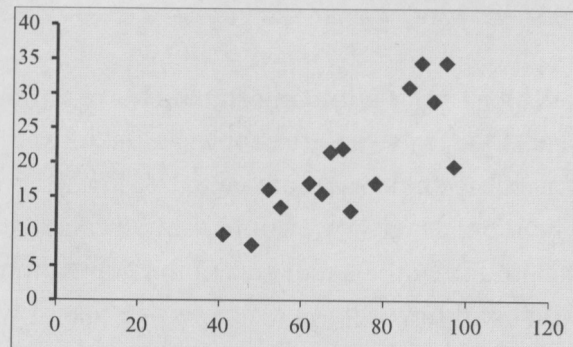
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Grid 18. For a regression model of the form $y=a+bx$, if the value of b is less than zero ($b < 0$), then:

- a) There is no correlation between x and y
- b) There is an indirect (negative) correlation between x and y
- c) There is a direct (positive) correlation between x and y
- d) None of the above

Grid 19. The following data are available for a county regarding the population and number of live births by area of residence in 2024:

Area of residence	Population (P_i)	Live births (N_i)
Urban	400500	4500
Rural	350500	3600

The crude birth rate and the contribution of each population category to the general birth rate in the county were:

- a) 10.8 live births per 1000 inhabitants, with contributions of 6.0 from urban and 4.8 from rural
- b) 12.7 live births per 1000 inhabitants, with contributions of 8.1 from urban and 4.6 from rural
- c) 10.6 live births per 1000 inhabitants, with contributions of 6.1 from urban and 4.5 from rural
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Grid 20. Over the course of a year, an individual purchased 600 Euros at the following exchange rates:

Exchange rate (lei/Euro)	4.4	4.5	4.9
Euros purchased	200	300	100

According to the data in the table, the mean and the modal value are:

- a) 4.72 lei/Euro and 4.5 lei/Euro
- b) 4.53 lei/Euro and 4.5 lei/Euro
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Grid 21. At the level of three commercial units, the following data are known regarding:

- the value of revenues in the base period,
- the index of physical volume,
- the price index in the current period compared to the base period.

Commercial unit	Revenue in base period (mil. lei)	Quantity index	Price index
A	200	1.30	1.30
B	250	1.20	1.20



According to the data in the table, the absolute change in revenues in the current period compared to the base period is:

- a) 138 million lei
- b) 55.1%
- c) 24.4%
- d) 248 million lei

Grid 22. In a heteroskedastic model:

- a) the errors are constant
- b) the estimators are unbiased
- c) the estimators are efficient
- d) The variables are correlated

Grid 23. A population (age) pyramid with a narrow base and a wider top is characteristic of:

- a) Aged populations
- b) Small countries
- c) Young and growing populations
- d) Regions with demographic increase

Grid 24. The number of hours allocated weekly to individual study for 100 students enrolled in the undergraduate program "Economic Statistics" is:

Interval (hours)	12–14	14–16	16–18	18–20	20–22
Number of students	10	20	40	20	10

According to the data presented, the mode and the average number of hours allocated weekly to individual study have the following values:

- a) 16 hours and 18 hours
- b) 17 hours and 17 hours
- c) 14 hours and 16 hours
- d) 18 hours and 20 hours

Grid 25. In the case of a survey, the inferential statistical analysis stage is:

- a) An optional stage, because descriptive analysis provides us with sufficient information;
- b) The stage in which population parameters are estimated based on a probabilistically guaranteed confidence interval;
- c) The stage in which data is collected and estimators are calculated;
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Grid 26. Breusch-Pagan test implies running an auxiliary regression of:

- a) squared residuals
- b) absolute value of the residuals
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Grid 27. In which case is a sex ratio above 1 (more than 100 males per 100 females) considered demographically normal?

- a) In the 0–1 age group
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Grid 28. What does the mode represent in a dataset?

- a) the middle number
- b) the average number
- c) the number that appears most often
- d) the highest number

Grid 29. The existence of nonresponses leads to:

- a) A decrease in representativity error by reducing the sample size
- b) Biased estimators because nonrespondents may form a distinct group with different characteristics
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- d) An increase in representativity errors caused by coverage area issues

Grid 30. What does the term "heteroskedasticity" refer to in econometrics?

- a) Unequal variance of error terms
- b) Perfect collinearity among independent variables
- c) Lack of independence among observations
- d) Presence of outliers in the data



ADMISSION EXAM
VERSION B 4

Each question has only one correct answer

Each correct answer = 3 points

Duration of the exam = 90 minutes

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- b) the average number
- c) the number that appears most often
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Grid 3. A stratified survey is to be conducted among the clients of a bakery products company in the South-West development region. The information needed for sampling is as follows:

Stratum	Number of firms	Average turnover (billion Lei)	Variance
Urban	350	25	16
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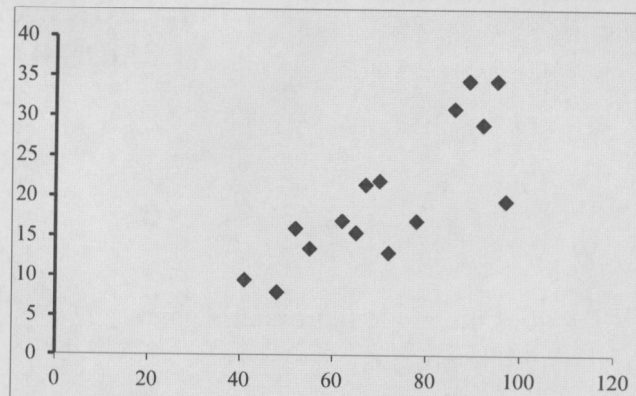
Determine the required sample size for a confidence level of 95% ($z_{(1-\alpha/2)}=1.96$) and a maximum allowable margin of error of $\pm 3\%$ of the average turnover:

- a) 436
- b) 135
- c) 94
- d) 184



Grid 4. The following scatter plot diagram is given. For a simple regression model, what are the most likely values for the intercept b_0 and slope b_1 ?

- a) $b_0 = -20$ and $b_1 = 0$
- b) $b_0 = 0$ and $b_1 = -2$
- c) $b_0 = -20$ and $b_1 = 0.5$
- d) $b_0 = 20$ and $b_1 = -2$



Grid 5. The value under which there are located 75 percent of the observations is:

- a) the third quartile
- b) the first quartile
- c) the median
- d) the mean

Grid 6. In a time series, which of the following does *not* belong to the category of relative indicators?

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- b) Index of dynamics
- c) Rate of dynamics
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Grid 9. For the following sample of 8 counties, a researcher has collected data on the unemployment rates and GDP/capita.



Counties	GDP/capita	Unemployment Rate
Arad	27.22	3.50
Bihor	21.58	4.20
Botosani	12.99	4.00
Bucharest	69.06	2.00
Cluj	32.52	3.80
Ilfov	43.63	1.60
Maramures	17.11	4.10
Timis	39.65	1.90

The Spearman's coefficient for correlation is:

- a) -0.785
- b) -0.809
- c) -0.975
- d) 0.975

Grid 10. Relative frequencies of a nominal variable are best displayed using:

- a) a pie chart
- b) a histogram
- c) a scatter plot
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Grid 11. Over five years, a team of statisticians completed 335 projects, as follows:

Year	2017	2018	2019	2020	2021
Number of projects	50	60	65	74	86

According to the data analysis, what was the average annual increase in the number of projects?

- a) 67 projects
- b) 114.52%
- c) 9 projects
- d) +14.52%

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Grid 13. In a heteroskedastic model:

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- c) the estimators are efficient
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Grid 14. If the population density in a county is 100 inhabitants per km^2 , the average distance between two inhabitants is:

- a) 0.10 km
- b) 0.12 km
- c) 0.20 km
- d) 1.20 km

Grid 15. What is the name of the chart that uses the following for its representation: minimum value, first quartile, median, third quartile, and maximum value?

- a) cumulative frequency curve
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- c) simple harmonic mean of the changes with a chain base
- d) weighted arithmetic mean of the changes with a fixed base

Grid 17. Which of the following statements regarding the optimal stratified survey is true:

- a) The stratified structure of the sample must replicate the structure of the population
- b) The sub-sample sizes are calculated based on the coefficient of variation
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Grid 20. The following data is known about the number of employees in three branches of a company in June 2022:

Branch	Number of employees
Branch 1	120
Branch 2	160
Branch 3	140
Total	420

The ascending cumulative absolute frequency of the second branch is:

- a) equal to 66.7%
- b) equal to 160 employees
- c) equal to 280 employees
- d) equal to 38.1%

Grid 21. For a time series, the trend was estimated using the analytical method, resulting in the following equation: $\hat{Y}_t = 100 + 0.01 \cdot t$

Specify which of the following statements is correct:

- a) The series is stationary and follows an ARMA process
- b) The cyclical component is equal to 100
- c) The series shows an upward trend
- d) The seasonal component is 0.01

Grid 22. The sample size is directly proportional to:

- a) Residual variance
- b) The average level of the estimator
- c) The probability with which the results are guaranteed
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According to the data in the table, the mean and the modal value are:

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- c) 4.58 lei/Euro and 4.0 lei/Euro
- d) 4.0 lei/Euro and 4.9 lei/Euro

Grid 26. At a commercial company, the following data were recorded for two consecutive periods:

Product	Quantities sold (units)		Unit price (lei/unit)	
	Base period	Current period	Base period	Current period
A	50	60	80	88
B	60	72	90	99

Based on the data in the table, the group index of physical volume and the group index of prices is:

- a) 120.0% and 110.0%
- b) 132.0% and 120.0%
- c) 120.0% and 132.0%
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Grid 27. A simple random survey was conducted among employees in the IT sector. The sample size was 2,500. The responses to the question "What impact does artificial intelligence have on your job in the IT field?" are summarized in the following table:

Response	Frequency
Significantly improves working conditions	700
I notice no change	1500
Puts the job at risk	300
Total	2500

Calculate the confidence interval, guaranteed with a probability of 95.45% ($z_{(1-\alpha/2)}=2$), for the proportion of respondents who believe that AI significantly improves working conditions is:

- a) 26.20% - 29.80%
- b) 18.36% - 21.96%
- c) 27.10% - 28.90%
- d) 70.20% - 73.80%



Grid 28. The following table shows the descriptives for sales and R&D expenditures of a sample of 95 firms:

	Sales (thousands lei)	R&D expenditures
Mean	350	50
Standard deviation	30	5

Covariance between the two variables is 90.

The Pearson's coefficient of correlation is:

- a) 0.6
- b) 0.25
- c) 0.75
- d) 1

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Grid 30. The number of hours allocated weekly to individual study for 100 students enrolled in the undergraduate program "Economic Statistics" is:

Interval (hours)	12–14	14–16	16–18	18–20	20–22
Number of students	10	20	40	20	10

According to the data presented, the mode and the average number of hours allocated weekly to individual study have the following values:

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ADMISSION EXAM
VERSION B 5

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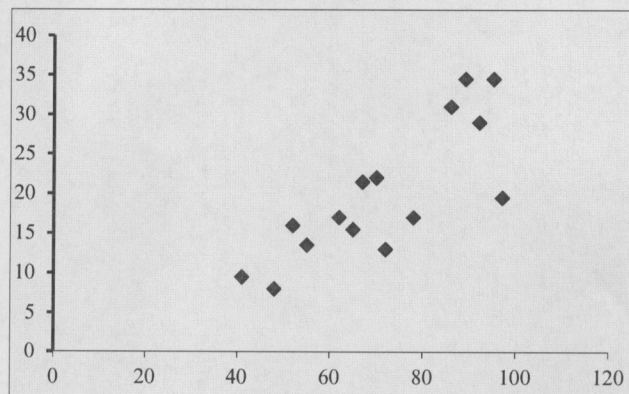
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ADMISSION EXAM
VERSION B 6

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Each correct answer = 3 points

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Grid 6. If the population density in a county is 100 inhabitants per km², the average distance between two inhabitants is:

- a) 0.10 km
- b) 0.12 km
- c) 0.20 km
- d) 1.20 km

Grid 7. The value under which there are located 75 percent of the observations is:

- a) the third quartile
- b) the first quartile
- c) the median
- d) the mean

Grid 8. The number of hours allocated weekly to individual study for 100 students enrolled in the undergraduate program "Economic Statistics" is:

Interval (hours)	12–14	14–16	16–18	18–20	20–22
Number of students	10	20	40	20	10

According to the data presented, the mode and the average number of hours allocated weekly to individual study have the following values:

- a) 16 hours and 18 hours
- b) 17 hours and 17 hours
- c) 14 hours and 16 hours
- d) 18 hours and 20 hours

Grid 9. For a time series, the trend was estimated using the analytical method, resulting in the following equation: $\hat{Y}_t = 100 + 0.01 \cdot t$

Specify which of the following statements is correct:

- a) The series is stationary and follows an ARMA process
- b) The cyclical component is equal to 100
- c) The series shows an upward trend
- d) The seasonal component is 0.01

Grid 10. Which of the following statements regarding the optimal stratified survey is true:

- a) The stratified structure of the sample must replicate the structure of the population
- b) The sub-sample sizes are calculated based on the coefficient of variation
- c) The representativity error cannot be calculated at the level of each stratum
- d) A stratum with a small size in the population but with greater dispersion compared to other strata will have a larger sample size than it would under proportional allocation



Grid 11. For a regression model of the form $y=a+bx$, if the value of b is less than zero ($b < 0$), then:

- a) There is no correlation between x and y
- b) There is an indirect (negative) correlation between x and y
- c) There is a direct (positive) correlation between x and y
- d) None of the above

Grid 12. The following table shows the descriptives for sales and R&D expenditures of a sample of 95 firms:

	Sales (thousands lei)	R&D expenditures
Mean	350	50
Standard deviation	30	5

Covariance between the two variables is 90.

The Pearson's coefficient of correlation is:

- a) 0.6
- b) 0.25
- c) 0.75
- d) 1

Grid 13. The following data are available for a county regarding the population and number of live births by area of residence in 2024:

Area of residence	Population (P_i)	Live births (N_i)
Urban	400500	4500
Rural	350500	3600

The crude birth rate and the contribution of each population category to the general birth rate in the county were:

- a) 10.8 live births per 1000 inhabitants, with contributions of 6.0 from urban and 4.8 from rural
- b) 12.7 live births per 1000 inhabitants, with contributions of 8.1 from urban and 4.6 from rural
- c) 10.6 live births per 1000 inhabitants, with contributions of 6.1 from urban and 4.5 from rural
- d) 15.3 live births per 1000 inhabitants, with contributions of 9.1 from urban and 6.2 from rural

Grid 14. Relative frequencies of a nominal variable are best displayed using:

- a) a pie chart
- b) a histogram
- c) a scatter plot
- d) a line



Grid 15. What does the mode represent in a dataset?

- a) the middle number
- b) the average number
- c) the number that appears most often
- d) the highest number

Grid 16. At a commercial company, the following data were recorded for two consecutive periods:

Product	Quantities sold (units)		Unit price (lei/unit)	
	Base period	Current period	Base period	Current period
A	50	60	80	88
B	60	72	90	99

Based on the data in the table, the group index of physical volume and the group index of prices is:

- a) 120.0% and 110.0%
- b) 132.0% and 120.0%
- c) 120.0% and 132.0%
- d) 1880 lei and 1128 lei

Grid 17. The sample size is directly proportional to:

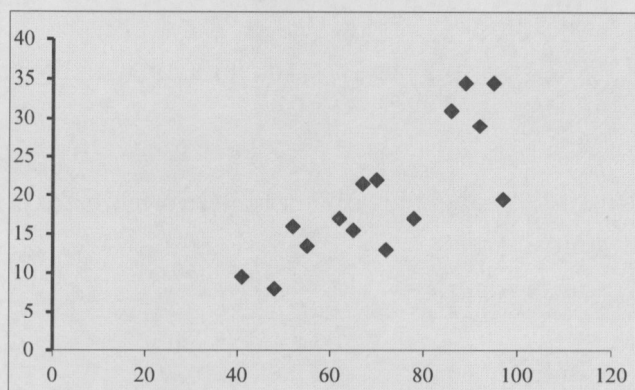
- a) Residual variance
- b) The average level of the estimator
- c) The probability with which the results are guaranteed
- d) The coefficient of determination

Grid 18. In a heteroskedastic model:

- a) the errors are constant
- b) the estimators are unbiased
- c) the estimators are efficient
- d) The variables are correlated

Grid 19. The following scatter plot diagram is given. For a simple regression model, what are the most likely values for the intercept b_0 and slope b_1 ?

- a) $b_0 = -20$ and $b_1 = 0$
- b) $b_0 = 0$ and $b_1 = -2$
- c) $b_0 = -20$ and $b_1 = 0.5$
- d) $b_0 = 20$ and $b_1 = -2$





Grid 20. A population (age) pyramid with a narrow base and a wider top is characteristic of:

- a) Aged populations
- b) Small countries
- c) Young and growing populations
- d) Regions with demographic increase

Grid 21. What is the name of the chart that uses the following for its representation: minimum value, first quartile, median, third quartile, and maximum value?

- a) cumulative frequency curve
- b) histogram
- c) box plot diagram
- d) scatter plot

Grid 22. In a time series, which of the following does *not* belong to the category of relative indicators?

- a) Average absolute change
- b) Index of dynamics
- c) Rate of dynamics
- d) Average index

Grid 23. At the level of three commercial units, the following data are known regarding:

- the value of revenues in the base period,
- the index of physical volume,
- the price index in the current period compared to the base period.

Commercial unit	Revenue in base period (mil. lei)	Quantity index	Price index
A	200	1.30	1.30
B	250	1.20	1.20

According to the data in the table, the absolute change in revenues in the current period compared to the base period is:

- a) 138 million lei
- b) 55.1%
- c) 24.4%
- d) 248 million lei

Grid 24. A simple random survey was conducted among employees in the IT sector. The sample size was 2,500. The responses to the question "What impact does artificial intelligence have on your job in the IT field?" are summarized in the following table:

Response	Frequency
Significantly improves working conditions	700
I notice no change	1500
Puts the job at risk	300
Total	2500



Calculate the confidence interval, guaranteed with a probability of 95.45% ($z_{(1-\alpha/2)}=2$), for the proportion of respondents who believe that AI significantly improves working conditions is:

- a) 26.20% - 29.80%
- b) 18.36% - 21.96
- c) 27.10% - 28.90%
- d) 70.20% - 73.80%

Grid 25. Breusch-Pagan test implies running an auxiliary regression of:

- a) squared residuals
- b) absolute value of the residuals
- c) absolute value of the errors
- d) None of the above

Grid 26. For the following sample of 8 counties, a researcher has collected data on the unemployment rates and GDP/capita.

Counties	GDP/capita	Unemployment Rate
Arad	27.22	3.50
Bihor	21.58	4.20
Botosani	12.99	4.00
Bucharest	69.06	2.00
Cluj	32.52	3.80
Ilfov	43.63	1.60
Maramures	17.11	4.10
Timis	39.65	1.90

The Spearman's coefficient for correlation is:

- a) -0.785
- b) -0.809
- c) -0.975
- d) 0.975

Grid 27. In which case is a sex ratio above 1 (more than 100 males per 100 females) considered demographically normal?

- a) In the 0–1 age group
- b) In the rural population
- c) In the 65+ age group
- d) In the urban population

Grid 28. The following data is known about the number of employees in three branches of a company in June 2022:

Branch	Number of employees
Branch 1	120
Branch 2	160
Branch 3	140
Total	420



The ascending cumulative absolute frequency of the second branch is:

- a) equal to 66.7%
- b) equal to 160 employees
- c) equal to 280 employees
- d) equal to 38.1%

Grid 29. Over five years, a team of statisticians completed 335 projects, as follows:

Year	2017	2018	2019	2020	2021
Number of projects	50	60	65	74	86

According to the data analysis, what was the average annual increase in the number of projects?

- a) 67 projects
- b) 114.52%
- c) 9 projects
- d) +14.52%

Grid 30. In the case of a survey, the inferential statistical analysis stage is:

- a) An optional stage, because descriptive analysis provides us with sufficient information;
- b) The stage in which population parameters are estimated based on a probabilistically guaranteed confidence interval;
- c) The stage in which data is collected and estimators are calculated;
- d) A necessary stage only if the survey is online, in order to increase the representativeness of the sample.

