



"Dissemination of Education for Knowledge, Science and Culture"
-Shikshanmaharshi Dr. Bapuji Salunkhe
Shri Swami Vivekanand Shikshan Sanstha's
VIVEKANAND COLLEGE, KOLHAPUR
(Empowered Autonomous)



DEPARTMENT OF STATISTICS

REMEDIAL COACHING

For B.Sc. II

2024-2025

19 August, 2024 to 29 August, 2024

Ms. A. M. Makandar
Co-ordinator



Mrs. V. C. Shinde
HEAD
DEPARTMENT OF STATISTICS
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

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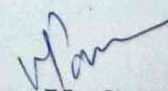
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VIVEKANAND COLLEGE KOLHAPUR
(EMPOWERED AUTONOMOUS)

Department of Statistics
REMEDIAL COACHING

Goals & Objectives

1. To identify the strengths and weaknesses of students.
2. To enhance the academic abilities of students who need additional support in comparison to other students.
3. To provide necessary facilities and support for the academic development of all students.




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Shri Swami Vivekanand Shikshan Sanstha's
VIVEKANAND COLLEGE KOLHAPUR
(EMPOWERED AUTONOMOUS)
Department of Statistics
REMEDIAL COACHING
NOTICE

Date: 12/08/2024

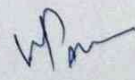
All the students of **B.Sc. II** are hereby informed that the lectures of "**Remedial Coaching**" will be conducted from **19/08/2024 to 29/08/2024** in the **Department of Statistics** at **10:00 a.m.**, as per the following timetable.

TIMETABLE

Date: 19/08/2024 to 29/08/2024. (10 Days)
Time: 10.00 am to 11.00 am

Sr. No.	Date	Name of Teacher	Sign
1.	19/08/2024	Mrs. V. C. Shinde	
2.	20/08/2024	Mrs. V. C. Shinde	
3.	21/08/2024	Mr. A. B. Bhosale	
4.	22/08/2024	Ms. M. A. Mulik	
5.	23/08/2024	Ms. A. M. Makandar	
6.	24/08/2024	Ms. P. V. Ransubhe	
7.	26/08/2024	Mr. D. D. Patil	
8.	27/08/2024	Mr. A. S. Tangawade	
9.	28/08/2024	Mr. A. B. Bhosale	
10.	29/08/2024	Ms. M. A. Mulik	



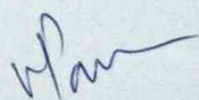

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VIVEKANAND COLLEGE KOLHAPUR
(EMPOWERED AUTONOMOUS)
Department of Statistics
SYLLABUS - REMEDIAL COACHING

Sr. No.	Unit No.	Name of Unit	No. of Hours
1.	Unit 1	Measures of Central Tendency	1
2.	Unit 2	Measures of Dispersion	1
3.	Unit 3	Correlation, Regression & Multiple correlation	2
4.	Unit 4	Probability	2
5.	Unit 5	Mathematical Expectation	2
6.	Unit 5	Some Standard Discrete Probability Distributions	2




Mrs. V. C. Shinde
HEAD
DEPARTMENT OF STATISTICS
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

46
50

Date: 9/08/2024

Time: 11.30-12.30

Marks: 50

Name of the Student: Kadam Parimal C.

Class: B.Sc. II

- 1) If $P(A)=0.3$, $P(B)=0.78$, $P(A \cap B)=0.16$ then $P(A|B)=\dots\dots\dots$
~~A) 0.21~~ B) 0.79 C) 0.53 D) 0.63
- 2) An important property of distribution function $F(x)$, such as it is $\dots\dots\dots$
 A) An increasing function B) A decreasing function
 C) A monotonically decreasing function ~~D) A non-decreasing function~~
- 3) If X is a discrete r.v. with mean $E(X)$ then $E[X - E(X)]^2$ is called $\dots\dots\dots$
 A) Mean ~~B) Variance~~ C) Standard Deviation D) Second raw moment
- 4) If X has p.m.f. $P(x) = \frac{1}{k+1}$, $x = 0, 1, 2, \dots, k$ and the mean of the distribution is 6. Then the value of k is ...
 A) 6 B) 18 C) 36 ~~D) 12~~
- 5) A r.v. X follows discrete uniform distribution assuming the values $-3, -2, -1, 0, 1, 2, 3$ then mean and variance of X are ...
~~A) 4 and 6~~ B) 0.25 and 4 C) 0 and 4 D) 7 and 4
- 6) When population is finite and sampling is done without replacement so that the events are statistically dependent although random then the distribution under consideration is ...
 A) Bernoulli ~~B) Hyper geometric~~ C) Binomial D) Discrete uniform
- 7) Let $\Omega = \{HH, HT, TH, TT\}$ and A and B are two events defined on sample space Ω then which of the following events shows partition of sample space Ω $\dots\dots\dots$
 A) $A = \{HH, TT\}$, $B = \{HT, TH\}$ B) $A = \{HH\}$, $B = \{HT, TH, TT\}$
 C) $A = \{HH, HT\}$, $B = \{TH, TT\}$ ~~D) All the above~~
- 8) The three-regression plane coincide if $\dots\dots\dots$, where $|R|$ is the determinant of simple correlation coefficients.
~~A) $|R| = 0$~~ B) $|R| = 1$ C) $|R| > 0$ D) $|R| > 1$
- 9) In a trivariate population, if $r_{12} = 0.75$, $r_{13} = 0.6$ and $r_{23} = 0.5$ then the value of $R^2_{1,23}$ is $\dots\dots\dots$
 A) 0.73 B) 0.53 ~~C) 0.63~~ D) 0.83
- 10) For the following distribution:
- | | | | | | |
|------|-----|-----|-----|------|------|
| X | 1 | 2 | 3 | 4 | 5 |
| P(x) | 0.1 | 0.2 | 0.3 | 0.25 | 0.15 |
- The value of median is ...
 A) 2 ~~B) 3~~ C) 4 D) Not exists
- 11) The component of time series attached to a long-term variation in terms are ...
 A) Cyclical variations B) Seasonal variation ~~C) Secular trend~~ D) Irregular variations

- 12) The mean, median and mode of the distribution is 23, 25 & 27 respectively then distribution is
☒ A) Positively Skewed B) Symmetric C) Negatively Skewed D) Normal
- 13) Which of the following is not absolute measure of dispersion?
☒ A) Standard deviation B) Variance
 C) Coefficient of Variance D) Mean deviation
- 14) If the third ordered central moment (μ_3) is negative then the distribution is
 A) Symmetric ☒ B) Skewed Negatively C) Skewed Positively D) Platykurtic
- 15) If X & Y are independent random variable then
 A) Cov. (X, Y) = 0 B) Corr(X, Y) = 0 ☒ C) $E(XY) = E(X) \cdot E(Y)$ D) All of them
- 16) If X has Poisson distribution with $E(X) = 3$ then $V(2x+3)$ is...
☒ A) 12 B) 3 C) 6 D) 0
- 17) Let X has geometric distribution with parameter 0.2 then its mean is
 A) $\frac{1}{4}$ B) $\frac{1}{2}$ C) $\frac{3}{4}$ ☒ D) 4
- 18) If X follows NBD (k, p) then variance of X is.....
 A) $\frac{q}{p^2}$ B) $\frac{kq}{p}$ C) $\frac{kp}{q^2}$ ☒ D) $\frac{kq}{p^2}$
- 19) If $f(x, y) = e^{-(x+y)}$, $x, y \geq 0$ then marginal distribution of X is.....
☒ A) e^x B) e^y ☒ C) e^{-x} D) e^{-y}
- 20) In time series Analysis, when the change is by constant rate then model used is _____.
☒ A) Additive ☒ B) Multiplicative C) Mixed D) Exponential.
- 21) If correlation between x and y is -0.3, then correlation between y and x is
☒ A) 0.3 ☒ B) -0.3 C) Zero D) None of these
- 22) With usual notations the regression equation X_3 on X_1 and X_2 is
☒ A) $X_3 = b_{32.1}X_1 + b_{31.2}X_2$ B) $X_3 = b_{21.3}X_1 + b_{23.1}X_3$
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- 23) The coefficient of multiple determination is.....
☒ A) $R_{1.23}$ ☒ B) $R^2_{1.23}$ C) $R^2_{32.1}$ D) $R^2_{12.3}$
- 24) The correct relationship between $R^2_{1.23}$ and r_{13} is.....
☒ A) $1 - R^2_{1.23} = (1 - r^2_{12})(1 - r^2_{13.2})$ B) $R^2_{1.23} = (1 - r^2_{12})(1 - r^2_{13.2})$
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- 25) Which of the following is not one of four types of variation that is estimated in time series analysis?
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VIVEKANAND COLLEGE KOLHAPUR (EMPOWERED AUTONOMOUS)
Department of Statistics
Diagnostic Test

28
50

Date: 9/08/2024

Time: 11.30-12.30

Marks: 50

Name of the Student: Patil Shreya Pravin

Class: B.Sc. II

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Date: 9/08/2024

Time: 11.30-12.30

Marks: 50

Name of the Student:

Ajagekar Maithili Sunil

Class: B.Sc. II

20
50

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VIVEKANAND COLLEGE KOLHAPUR (EMPOWERED AUTONOMOUS)
Department of Statistics
Diagnostic Test

46
50

Date: 9/08/2024

Time: 11.30-12.30

Marks: 50

Name of the Student: Mane Krushna Balavant

Class: B.Sc. II

1) If $P(A)=0.3$, $P(B)=0.78$, $P(A \cap B)=0.16$ then $P(A|B) = \dots\dots\dots$

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☒ B) $A = \{HH, HT\}$, $B = \{TH, TT\}$ ☒ D) All the above

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✓ B) Variance
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14) If the third ordered central moment (μ_3) is negative then the distribution is

- ✓ A) Symmetric ✓ B) Skewed Negatively C) Skewed Positively D) Platykurtic

15) If X & Y are independent random variable then

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- ✓ A) $\frac{1}{4}$ B) $\frac{1}{2}$ C) $\frac{3}{4}$ ✓ D) 4

18) If X follows NBD (k, p) then variance of X is

- ✓ A) $\frac{q}{p^2}$ B) $\frac{kq}{p}$ C) $\frac{kp}{q^2}$ ✓ D) $\frac{kq}{p^2}$

19) If $f(x, y) = e^{-(x+y)}$, $x, y \geq 0$ then marginal distribution of X is

- ✓ A) e^x B) e^y ✓ C) e^{-x} D) e^{-y}

20) In time series Analysis, when the change is by constant rate then model used is

- ✓ A) Additive ✓ B) Multiplicative C) Mixed D) Exponential.

21) If correlation between x and y is -0.3, then correlation between y and x is

- ✓ A) 0.3 ✓ B) -0.3 C) Zero D) None of these

22) With usual notations the regression equation X_3 on X_1 and X_2 is

- ✓ A) $X_3 = b_{32.1}X_1 + b_{31.2}X_2$ B) $X_3 = b_{21.3}X_1 + b_{23.1}X_3$
✓ C) $X_3 = b_{31.2}X_1 + b_{32.1}X_2$ D) $X_3 = b_{23.1}X_1 + b_{21.3}X_2$

23) The coefficient of multiple determination is

- ✓ A) $R_{1.23}$ ✓ B) $R^2_{1.23}$ C) $R^2_{32.1}$ D) $R^2_{12.3}$

24) The correct relationship between $R^2_{1.23}$ and r_{13} is

- ✓ A) $1 - R^2_{1.23} = (1 - r^2_{12})(1 - r^2_{13.2})$ B) $R^2_{1.23} = (1 - r^2_{12})(1 - r^2_{13.2})$
C) $1 - R^2_{1.23} = (1 - r^2_{13})(1 - r^2_{13.2})$ D) $R^2_{1.23} = (1 - r^2_{13})(1 - r^2_{12.3})$

25) Which of the following is not one of four types of variation that is estimated in time series analysis?

- ✓ A) Predictable B) Irregular C) Cyclical D) Trend

Dissemination of Education for Knowledge, Science and Culture"
-Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's
VIVEKANAND COLLEGE KOLHAPUR
(EMPOWERED AUTONOMOUS)

Department of Statistics
REMEDIAL COACHING

Diagnostic Test
Students List

Sr. No.	Name of Student	Percentage %	Sign
1.	Kadam Parimal Chandrashekhar	92	<i>Parimal</i>
2.	Patil Shreya Pravin	52	<i>Patil</i>
3.	Ajagekar Maithili Sunil	40	<i>M.S. Ajagekar</i>
4.	Mane Krushna Balavant	92	<i>Mkrushna</i>
5.	Fadtare Divya Ananda	44	<i>Fadtare</i>
6.	Sankpal Kajal Baliram	32	<i>Sankpal</i>
7.	Bharankar Sumita Sandip	36	<i>Bharankar</i>
8.	Patil Shital Shivaji	40	<i>Patil</i>
9.	Gorade Vishal Karyappa	36	<i>Gorade</i>
10.	Kamble Shrirang Bhagwan	44	<i>Kamble</i>



V. C. Shinde
Mrs. V. C. Shinde
HEAD
DEPARTMENT OF STATISTICS
VIVEKANAND COLLEGE, KOLHAPUR
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VIVEKANAND COLLEGE KOLHAPUR
(EMPOWERED AUTONOMOUS)
Department of Statistics
REMEDIAL COACHING

“Notice: Remedial Coaching Examination”

Date: 26/08/2024

All the students of B.Sc. II, who have attended the coaching sessions are informed that the Remedial Coaching Exam will be held on 03/09/2024 between 11:30 a.m. to 12:30 p.m. in the Room No. 401, Department of Statistics.




Mrs. V. C. Shinde
HEAD
DEPARTMENT OF STATISTICS
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

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VIVEKANAND COLLEGE KOLHAPUR
(EMPOWERED AUTONOMOUS)

Department of Statistics
REMEDIAL COACHING

Attendance

Sr. No.	Name of Student	24/08/2024	26/08/2024	27/08/2024	28/08/2024	29/08/2024
1.	Patil Shreya Pravin	<u>Patil</u>	<u>Patil</u>	<u>Patil</u>	<u>Patil</u>	<u>Patil</u>
2.	Ajagekar Maithili Sunil	<u>M.S.Ajagekar</u>	<u>M.S.Ajagekar</u>	<u>M.S.Ajagekar</u>	<u>M.S.Ajagekar</u>	<u>M.S.Ajagekar</u>
3.	Fadtare Divya Ananda	<u>Fadtare</u>	<u>Fadtare</u>	<u>Fadtare</u>	<u>Fadtare</u>	<u>Fadtare</u>
4.	Sankpal Kajal Baliram	<u>Sankpal</u>	Ab	<u>Sankpal</u>	<u>Sankpal</u>	<u>Sankpal</u>
5.	Bharankar Sumita Sandip	<u>Bharankar</u>	<u>Bharankar</u>	<u>Bharankar</u>	<u>Bharankar</u>	<u>Bharankar</u>
6.	Patil Shital Shivaji	<u>Shiteel</u>	<u>Shiteel</u>	<u>Shiteel</u>	<u>Shiteel</u>	<u>Shiteel</u>
7.	Gorade Vishal Karyappa	<u>Gorade</u>	<u>Gorade</u>	<u>Gorade</u>	<u>Gorade</u>	<u>Gorade</u>
8.	Kamble Shrirang Bhagwan	<u>Kamble</u>	<u>Kamble</u>	<u>Kamble</u>	<u>Kamble</u>	<u>Kamble</u>



Date: 3/09/2024

Marks: 50

Time: 11.30-12.30

Name of the Student: Patil Shreya Pravin40
50

1. The both regression coefficient has
- a) Same algebraic sign always b) Same algebraic sign never
c) Same algebraic sign sometimes d) all of these
2. If correlation between X and Y is 0.7, then correlation between $(4X+3)$ and $(3Y-4)$ is
- a) 0.7 b) -0.7 c) 0 d) None of these
3. A set of values with mean 20 and its coefficient of variation is 15% then variance of the series is.....
- a) 30 b) 3 c) 9 d) 300
4. If $r_{12} = r_{13} = 0$ then $R_{1.23} = \dots\dots\dots$
- a) 1 b) 0 c) Unpredictable d) None of these
5. The variation in values of times series due to traditions and festivals is known as
- a) Seasonal variation b) Cyclical variation
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6. If $r_{13} = r_{23} = 0$ then $r_{12.3} = \dots\dots\dots$
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7. Which of the following true for $|R| = \dots\dots\dots$
- a) $1 - r_{12}^2 - r_{13}^2 - r_{23}^2 + 2r_{12}r_{13}r_{23}$ b) $1 - r_{12}^2 + r_{13}^2 - r_{23}^2 + 2r_{12}r_{13}r_{23}$
b) $1 + r_{12}^2 - r_{13}^2 - r_{23}^2 + 2r_{12}r_{13}r_{23}$ d) $1 - r_{12}^2 - r_{13}^2 - r_{23}^2 - 2r_{12}r_{13}r_{23}$
8. If $\text{cov}(x,y) = -6$, $V(x) = 4$, $v(y) = 9$ then $r = \dots\dots\dots$
- a) -1 b) 1 c) -1 to +1 d) None of these
9. The order of residual $X_{1.23}$ is
- a) 1 b) 2 c) 3 d) None of these
10. The correlation coefficient is the between the regression coefficients
- a) A.M. b) Median c) Mode d) Geometric Mean
11. The additive model in Time Series is
- a) $Y = T + S + C + I$ b) $Y = T + S + I$ c) $Y = S + C + I$ d) $Y = T + S + C$
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- a) $\sum di^2 = 1$ b) $\sum di^2 = 0$ c) $\sum di^2 > 0$ d) $\sum di^2 < 0$
13. Let (X, Y) be a bivariate discrete r. v. with joint p. m. f.

(x,y)	(0,0)	(1,0)	(0,1)	(1,1)
P(x,y)	1/2	1/4	5/12	1/4

The mean of Y is

a) $1/3$

b) 1

~~c) $5/12$~~

d) $2/3$

14. If X and Y are two random variables with means $E(X)$ and $E(Y)$ resp. then the expressions $E[(X-E(X))(Y-E(Y))]$ is called

a) variance of X

b) Variance of Y

~~c) covariance between X and Y~~

d) correlation coefficient between X and Y

15. The correlation coefficient between X and Y is zero. We then conclude that.....

a) X and Y have some distribution.

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16. If X has one point distribution with $P(X=k)=1$ and $P(X \neq k)=0$, then variance of X is

a) k

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17. Deciles divide the data into..... equal parts.

a) 9

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~~c) 10~~

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18. If $X \rightarrow b(n, 1/4)$, then the probability distribution of $Y=n-X$ is.....

a) $b(n, 1/4)$

b) $b(4n, 1)$

~~c) $b(n, 3/4)$~~

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19. The second central moment of Poisson distribution with mean m is----

~~a) m~~

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21. If $X \rightarrow NB(k, p)$ then

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a) $m/(x+2)$

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Date: 3/09/2024

Marks: 50

Time: 11.30-12.30

Name of the Student: Ajagekar Maithili Sunil42
50

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VIVEKANAND COLLEGE KOLHAPUR (EMPOWERED AUTONOMOUS)

Department of Statistics

Remedial Coaching Exam 2024-25 Class: B.Sc. II

Date: 3/09/2024

Marks: 50

Time: 11.30-12.30

Name of the Student:

Fadtare Divya A.

42
50

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Name of the Student:

Sankpal Kajal Badigam

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20. Geometric distribution is a particular case of

a) Binomial Distribution

b) Poisson Distribution

b) Negative binomial Distribution

d) Hypergeometric Distribution

21. If $X \rightarrow NB(k, p)$ then

a) mean < variance

b) mean > variance

b) mean = variance

d) mean \leq Geometric Distribution

22. Mode of the binomial distribution is----

a) not unique

b) unique

c) np

d) npq

23. A random variable $X \rightarrow H(N, M, n)$ when $N \rightarrow \infty$ and $\frac{M}{N} = p$, the distribution of X is....

a) $b(n, q)$

b) $b(m, p)$

c) $b(m, q)$

d) $b(n, p)$

24. If a random variable $X \rightarrow H(10, 6, 3)$ then the mean of X is.....

a) 10

b) 1.8

c) 6

d) 2

25. The recurrence between the probabilities of Poisson(m) is $P(X=x+1) = \dots\dots\dots P(X=x)$

a) $m/(x+2)$

b) m/x

c) $x/(m+1)$

d) $m/(x+1)$

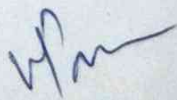
Shri Swami Vivekanand Shikshan Sanstha's
VIVEKANAND COLLEGE KOLHAPUR
(EMPOWERED AUTONOMOUS)
Department of Statistics
REMEDIAL COACHING

Marklist

Date: 04/09/2024

Sr. No.	Name of Student	Marks
1.	Patil Shreya Pravin	40
2.	Ajagekar Maithili Sunil	42
3.	Fadtare Divya Ananda	42
4.	Sankpal Kajal Baliram	44
5.	Bharankar Sumita Sandip	44
6.	Patil Shital Shivaji	38
7.	Gorade Vishal Karyappa	46
8.	Kamble Shrirang Bhagwan	40




Mrs. V.C. Shinde
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DEPARTMENT OF STATISTICS
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Dissemination of Education for Knowledge, Science and Culture"
-Shikshanmaharshi Dr. Bapuji Salunkhe

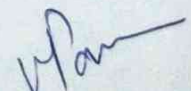
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REMEDIAL COACHING

Progress Report

Date:04/09/2024

Sr. No.	Name of Student	Previous Marks	Remedial Class Marks	Progress
1.	Patil Shreya Pravin	26	40	28 %
2.	Ajagekar Maithili Sunil	20	42	44 %
3.	Fadtare Divya Ananda	22	42	40 %
4.	Sankpal Kajal Baliram	16	44	56 %
5.	Bharankar Sumita Sandip	18	44	52 %
6.	Patil Shital Shivaji	20	38	36 %
7.	Gorade Vishal Karyappa	18	46	56 %
8.	Kamble Shrirang Bhagwan	22	40	36 %




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Department of Statistics
REMEDIAL COACHING
2024-2025

19 August, 2024 to 29 August, 2024

Report

The Department of Statistics organized **Remedial Coaching Classes** for B.Sc. II students from **19th August 2024 to 29th August 2024** (10:00 a.m. – 11:00 a.m.) to improve understanding and build a strong base in statistics.

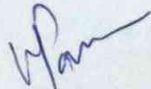
“The main objectives of this program were to assess students’ strengths and weaknesses, improve their learning abilities, and provide academic support for their overall development.”

A total of 08 students participated actively in the coaching. The sessions included lectures, problem-solving exercises, and interactive discussions. Attachments such as the Syllabus, Time Table, Attendance Records, Photographs, and Question Papers are enclosed.

The classes were planned and conducted by Ms. A. M. Makandar, Mr. A. B. Bhosale, Ms. M. A. Mulik, Ms. P. V. Ransubhe, Mr. A. S. Tangawade, and Mr. D. D. Patil, with the valuable support of the Principal, Dr. R. R. Kumbhar, and the Head of Department, Mrs. V. C. Shinde.

The program was successful in improving students’ conceptual clarity, confidence, and academic performance. It is recommended that such initiatives continue in the future for the benefit of students.




Mrs. V.C. Shinde
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