IMP MCQs Lecture 8

Chp18 Index Numbers
Chp6 Sequence Series

CA. Pranav Popat

Schedule

Date	Day	Chapter to be Covered
05-Aug-25	Tue	Chp4 Math for Finance
07-Aug-25	Thu	Chp13 Statistical Description of Data
09-Aug-25	Sat	Chp14 Central Tendency & Dispersion
11-Aug-25	Mon	Chp17 Correlation and Regression
13-Aug-25	Wed	Chp12 Blood Relations and Chp10 Direction Test
15-Aug-25	Fri	Chp11 Seating Arrangements & Chp9 Number Series…
17-Aug-25	Sun	Chp1 Ratio Proportion Indices Logarithm
19-Aug-25	Tue	Chp18 Index Numbers and Chp6 Sequence and Series
21-Aug-25	Thu	Chp2 Equations & Chp3 Linear Inequalities
23-Aug-25	Sat	Chp5 Permutations & Combinations
25-Aug-25	Mon	Chp7 Set Relation Functions
27-Aug-25	Wed	Chp15 Probability and Chp16 Theoretical Distribution

24 Days Challenge

24 DAYS QA CHALLENGE

QA (Math, LR and Stats) **BY CA. PRANAV POPAT**

CA FOUNDATION SEP 2025

Day Numbe	Date	Day	Title	Video Link	PDF Link	Duration (Hours)
8	11-Aug-25	Mon	IMP MCQs of Chp17 (Live on YT)	Play	PDF	0:50:36
9	12-Aug-25	Tue	Revision of Chp12 Blood Relations (Self/ One Shot)	Play	PDF	1:24:49
			Revision of Chp10 Direction Test (Self/ One Shot)	Play	PDF	1:01:11
10	13-Aug-25	Wed	IMP MCQs of Chp12 and Chp10 (Live on YT)	Play	PDF	1:02:11
11	14-Aug-25	Thu	Revision of Chp11 Seating Arrangements (Self/ One Shot)	Play	PDF	1:48:40
			Revision of Chp9 Number Series, Coding, Decoding (Self/ One Shot)	Play	PDF	1:15:49
12	15-Aug-25	Fri	IMP MCQs of Chp11 and Chp9 (Live on YT)	Play	PDF	1:01:49
13	16-Aug-25	Sat	Revision of Chp1 Ratio Proportion Indices Logarithm (Self/ One Shot)	Play	PDF	1:30:59
14	17-Aug-25	Sun	IMP MCQs of Chp1 Ratio Proportion Indices Logarithm (Live on YT)	Play	PDF	0:39:19
15	18-Aug-25	Mon	Revision of Chp18 Index Numbers (Self/ One Shot)	Play	PDF	1:43:42
			Revision of Chp6 Sequence and Series (Self/ One Shot)	Play	PDF	1:45:37
16	19-Aug-25	Tue	IMP MCQs of Chp18 and Chp6 (Live on YT)	coming soon	coming soon	

let’s get started.

Chp18 Index Numbers

PYQ May 2025

PYQ – May 2025			
(3)	The prices of a commodity in the year 2015 and 2020 were 50 and 60 respectively. Price relative of 2015 on 2020 is		
	a. 100	b. 110	
	c. 83.33	d. 120	✗

PYQ May 2025

PYQ – May 2025

(3) *The prices of a commodity in the year 2015 and 2020 were 50 and 60 respectively. Price relative of 2015 on 2020 is*

a. 100 b. 110

c. 83.33 d. 120

Price relative of 2015 on 2020 = $\frac{50}{60} \times 100$

current base

= 83.33

PYQ May 2025

PYQ – May 2025

(3) From the following chain base index number based on 2015, find out the new chain base index number for the year 2022 by shifting base year 2019.

Years	Index No. (Base 2015)
2015	100
2016	105
2017	95
2018	85
2019	120 → 100
2020	110
2021	130
2022	150

a. 125 b. 180

c. 100 d. 150

PYQ May 2025

PYQ – May 2025

(3) *From the following chain base index number based on 2015, find out the new chain base index number for the year 2022 by shifting base year 2019.*

Years	Index No. (Base 2015)
2015	100
2016	105
2017	95
2018	85
2019	120
2020	110
2021	130
2022	150

a. 125 ✓ b. 180

c. 100 d. 150

Original Index of 2022 (base 2015) = 150

Index of 2022 (base 2019) = $\frac{100}{120} \times 150$

= 125

$\frac{\text{original index}}{\text{index on which base is shifted}} \times 100 = \frac{150}{120} \times 100$

= 125

PYQ Jan 2025

PYQ Jan 2025

(87) *Which one of the following index uses the method of average of base year and current year ?*

a. *Laspeyre's Index*
b. *Paasche's Index*
c. *Marshall-Edgeworth Index*
d. *Fisher's Index*

PYQ Jan 2025

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d. *Fisher's Index*

PYQ Jan 2025

PYQ – Jan 2025

(3) When the cost of Beverages increased by 40%, the person said that the rise has increased his cost of living by 8%. Before the change in price, the percentage of his cost of living was due to buying beverages is:

a. 15% b. 20%

c. 5% d. 2%

	old	new
Coca Cola	60	84

+40%
+24 rs.

24 → 8%

Total cost of living before price change

$= \frac{24}{8\%} = 300$

share of beverages in cost of living $= \frac{60}{300} \times 100 = 20\%$

PYQ Jan 2025

PYQ – Jan 2025

(3) *When the cost of Beverages increased by 40%, the person said that the rise has increased his cost of living by 8%. Before the change in price, the percentage of his cost of living was due to buying beverages is:*

a.	*15%*	*b.*	*20%*
c.	*5%*	*d.*	*2%*

let P be original cost of living
and B is cost of beverage initially.

New cost of beverage = B X 140% = 1.4 B

Increase in cost of beverage = 0.4 B

New cost of living
= 108% X P
= 1.08 P

due to increase in B price
cost of living increased by 0.4 B

P + increase in B = 1.08 P

P + 0.4 B = 1.08 P

0.4B = 0.08 P

$$B = \frac{0.08}{0.4} \times P$$

= 0.2 P

% of cost of living due to beverage = 20%

MTP1 - Jan 2025

MTP1 - Jan 2025

(87) Which of the following statement is true?

a. Paasche's index number is based on base year quantity

b. Fisher's index satisfies the circular test

c. Arithmetic mean is the most appropriate average for constructing the index number

d. Splicing means constructing one continuous series from two different indices on the bases of common base

MTP1 - Jan 2025

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c. *Arithmetic mean is the most appropriate average for constructing the index number*

d. *Splicing means constructing one continuous series from two different indices on the bases of common base*

MTP1 - Jan 2025

MTP 1 – Jan 2025

(3) *In the year 2010 the monthly salary was ₹24,000. The consumer price index number was 140 in the year 2010 which rises to 224 in the year 2016. If he has to be rightly compensated what addition monthly salary to be paid to him*

a. ₹14,400 *b.* ₹38,400

c. ₹₹7,200 *d.* None of these

MTP1 - Jan 2025

MTP 1 – Jan 2025

(3) *In the year 2010 the monthly salary was ₹24,000. The consumer price index number was 140 in the year 2010 which rises to 224 in the year 2016. If he has to be rightly compensated what addition monthly salary to be paid to him*

a. ₹14,400 ✓ b. ₹38,400

c. ₹₹7,200 d. None of these

	2010	2016
Salary	24000	
CPI	140	224

New salary required =

$$\frac{24000}{140} \times 224$$

$$= 38400$$

additional : 38400 − 24000

= 14400

PYQ Sep 24

The consumer price index for the year 2023 is 273 with 2010 as base year. The average monthly wages of industrial worker in year 2023 is ₹ 8,190. What is the real wage?

a. ₹ 3,000
b. ₹ 2,800
c. ₹ 3,200
d. ₹ 3,400

PYQ Sep 24

The consumer price index for the year 2023 is 273 with 2010 as base year. The average monthly wages of industrial worker in year 2023 is ₹ 8,190. What is the real wage?

a. ₹ 3,000 ✓
b. ₹ 2,800
c. ₹ 3,200
d. ₹ 3,400

$$\text{real wage} = \frac{\text{current wage}}{\text{current index}} \times 100$$

$$= \frac{8190}{273} \times 100 = 3000$$

MTP Sep 24 Series II

In 1980, the net monthly income of the employee was ₹ 800/- p. m. The consumer price index number was 160 in 1980. It rises to 200 in 1984. If he has to be rightly compensated. The additional D. A. to be paid to the employee is

a. ₹ 175/-
b. ₹ 185/-
c. ₹ 200/-
d. ₹ 125/-

MTP Sep 24 Series II

In 1980, the net monthly income of the employee was ₹ 800/- p. m. The consumer price index number was 160 in 1980. It rises to 200 in 1984. If he has to be rightly compensated. The additional D. A. to be paid to the employee is

a. ₹ 175/- b. ₹ 185/-

c. ₹ 200/- d. ₹ 125/-

Monthly income (revised as per CPI)

$= \frac{800}{160} \times 200 = 1000$

additional DA req $= 1000 - 800$

$= 200$

MTP Sep 24 Series I

If the prices of all commodities in the base year are twice the values of the respective commodities in the current year, then the Fisher's ideal index number is equal to:

a. 200 *b.* 50

c. 400 *d.* 25

MTP Sep 24 Series I

If the prices of all commodities in the base year are twice the values of the respective commodities in the current year, then the Fisher's ideal index number is equal to:

a. 200 b. 50

c. 400 d. 25

as all prices of base are twice of current so from base to current prices are half.

L = 50 P = 50 F = 50

PYQ Dec. 21

The weighted averaged of price relatives of commodities, when the weights are equal to the value of commodities in the current year, yields_____ index number.

a. *Fisher's ideal*
b. *Lasperey's*
c. *Paasche's*
d. *Marshall-Edgeworth*

PYQ Dec. 21

The weighted averaged of price relatives of commodities, when the weights are equal to the value of commodities in the current year, yields_____ index number.

a. *Fisher's ideal*

b. *Lasperey's*

c. *Paasche's*

d. *Marshall-Edgeworth*

PYQ Jan. 21

When the prices for quantities consumed of all commodities are changing in the same ratio, then the index numbers due to Laspeyre's and Paasche's will be.

a. *Equal*
b. *Unequal*
c. *Reciprocal of Marshall Edge worth Index Number*
d. *Reciprocal of Fisher Index Number*

PYQ Jan. 21

When the prices for quantities consumed of all commodities are changing in the same ratio, then the index numbers due to Laspeyre's and Paasche's will be.

a. Equal
b. Unequal
c. Reciprocal of Marshall Edge worth Index Number
d. Reciprocal of Fisher Index Number

MTP Nov 18

Which of the options does not contain the proper use of Index numbers

a. *Helpful in policy determination*

b. *Useful in Forecasting*

c. *Equally useful in all condition for different purpose*

d. *Helpful in comparison*

MTP Nov 18

Which of the options does not contain the proper use of Index numbers

a. *Helpful in policy determination*

b. *Useful in Forecasting*

c. ✓ *Equally useful in all condition for different purpose*

d. *Helpful in comparison*

MTP Apr 21

If an increase of 10% in prices. The rise in wages is 20% then the real wage has increased by

a. 20% b. 10%

c. Less than 10% d. More than 20%

MTP Apr 21

If an increase of 10% in prices. The rise in wages is 20% then the real wage has increased by

a. 20% b. 10%

c. ✓ Less than 10% d. More than 20%

200 → 240

↓ ↓

200 $\frac{240}{110} \times 100$

$= 218.18$

	original	revised
	100	110
CPI		
wages	500	600 (500 × 120%)
real wages	500	$\frac{600}{110} \times 100 = 545.45$

$\frac{218.18 - 200}{200} \times 100$

$= 9.09\%$

increase in real wage % $= \frac{545.45 - 500}{500} \times 100$

$= 9.09\%$

Chp6 Sequence and Series

PYQ May 2025

PYQ – May 2025			
(3)	The sum of first three term of G.P. is 21/2 and their product is 27 which of the following is not a term of G.P., if the number are positive ?		
	a. 3	b. 2/3	
	c. 3/2	d. 6	

PYQ May 2025

PYQ – May 2025

(3) *The sum of first three term of G.P. is 21/2 and their product is 27 which of the following is not a term of G.P., if the number are positive ?*

a. 3 b. 2/3

c. 3/2 d. 6

By observation of options,

possible GP is $\frac{3}{2}, 3, 6$ or $6, 3, \frac{3}{2}$

verify :

sum $= \frac{3}{2} + 3 + 6 = \frac{21}{2}$

product $= 6 \times 3 \times \frac{3}{2} = 27$

2/3 is not term of GP

PYQ Jan 2025

PYQ – Jan 2025			
(3)	The sum of the 4^{th} and 8^{th} term of AP is 10. then the sum of first eleven term of series is		
	a. 33	b. 22	
	c. 44	d. 55	

PYQ Jan 2025

PYQ – Jan 2025

(3) *The sum of the 4th and 8th term of AP is 10. then the sum of first eleven term of series is*

a. 33 *b.* 22

c. 44 *d.* 55 ✓

$t_4 + t_8 = 10$

$a + 3d + a + 7d = 10$

$2a + 10d = 10$ —— (i)

$S_{11} = \frac{11}{2}[2a + 10d]$

$= \frac{11}{2}[10] = 55$

MTP 1 – Jan 2025

MTP 1 - Jan 2025

(87) *The 4th term of an A.P. is three times the first and the 7th term exceeds twice the third term by 1. Find the first term 'a' and common difference 'd'.*

a. a=3, d=2 ✓

b. a=4, d=3

c. a=5, d=4

d. a=6, d=5

3, 5, 7, 9, 11, 13, 15

$t_4 = 9 \quad a = 3$

$t_7 = 15 \quad t_3 = 7$

$7 \times 2 + 1 = 15$

MTP 1 – Jan 2025

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a. a=3, d=2 ✓

b. a=4, d=3

c. a=5, d=4

d. a=6, d=5

$t_4 = 3a$

$a+3d = 3a$

$3d = 2a$

$t_7 = (2 \times t_3) + 1$

$a+6d = 2(a+2d) + 1$

$a+6d = 2a+4d+1$

$2d = a+1$

$a = 2d-1$

$3d = 2(2d-1)$

$3d = 4d-2$

$2 = d$

$a = 2(2) - 1 = 3$

a) $a=3, d=2$

MTP June 24 Series I

MTP June 24 Series I

The first, second and seventh term of an AP. are in G.P. and the common difference is 2, the 2nd term of A.P. is :

a. 5/2 b. 2

c. 3/2 d. 1/2

MTP June 24 Series I

MTP June 24 Series I

The first, second and seventh term of an AP. are in G.P. and the common difference is 2, the 2nd term of A.P. is :

a. 5/2 b. 2

c. 3/2 d. 1/2

AP's t_1, t_2 and t_7 are in GP

a, $a+d$, $a+6d$ are in GP

a, $a+2$, $a+12$

as we know if x, y, z are in GP then $y^2 = xz$

so $(a+2)^2 = a(a+12)$

$a^2+4+4a = a^2+12a$

$4 = 8a \Rightarrow a = 1/2$

2nd term: $t_2 = a+d$

$= \frac{1}{2}+2$

$= \frac{5}{2}$

PYQ June 24

PYQ June 24

In an arithmetic progression, the seventh terms is x, and $(x+7)^{th}$ term is zero. Then x^{th} term is

a. 6 b. 7

c. 8 d. 10

PYQ June 24

PYQ June 24

In an arithmetic progression, the seventh terms is x, and $(x+7)^{th}$ term is zero. Then x^{th} term is

a. 6 b. 7

c. 8 d. 10

given $t_7 = x$ $t_{x+7} = 0$

$a+6d = x$ —— (i) $a+(x+7-1)d = 0$

$a+xd+6d = 0$

$xd + a+6d = 0$

$xd + x = 0$

$xd = -x$

$d = -1$

put $d=-1$ in eq(i),

$a + 6(-1) = x$

$a = x+6$

Requirement x^{th} term,

$t_x = a + (x-1)d$

$= (x+6) + (x-1)\times(-1)$

$= x+6-x+1 = 7$

PYQ June 24

PYQ June 24

If the second and eight terms of an arithmetic progression (AP) are equal to constant a, then the sum of first n terms of this AP is equal to

a. na

b. $\frac{a}{n}$

c. $2n+n(a-1)$

d. $n+a(n-1)$

PYQ June 24

PYQ June 24

If the second and eight terms of an arithmetic progression (AP) are equal to constant a, then the sum of first n terms of this AP is equal to

a. na ✓

b. $\frac{a}{n}$

c. $2n+n(a-1)$

d. $n+a(n-1)$

$t_2 = a$, $t_8 = a$

It means common difference is 0

$S_n = a+a+a+\ldots+n$ terms

$= n \times a$

MTP June 24 Series I

MTP June 24 Series I

A man starts his job with a certain monthly salary and earns a fixed increment every year. If his salary was ₹ 1,500 after 4 years of service and ₹ 1,800 after 10 years of service, what was his starting salary and what is the annual increment in rupees?

1350

a. ~~₹ 1,300~~, ₹ 50
b. ₹ 1,100, ₹ 50
c. ₹ 1,500, ₹ 30
d. None of these

MTP June 24 Series I

MTP June 24 Series I

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a. ~~₹ 1,300~~ 1350, ₹ 50 b. ₹ 1,100, ₹ 50

c. ₹ 1,500, ₹ 30 d. None of these

$Y_4 = 1500$ $Y_{10} = 1800$

a = first salary d = annual increment

$1500 = a + 3d$ ——— (i)

$1800 = a + 9d$ ——— (ii)

$300 = 6d \Rightarrow d = 50$

put d = 50 in eq (i)

$1500 = a + 3(50)$

$a = 1350$

PYQ Dec 23

If n^{th} term of an AP series is $7n-2$, then sum of 'n' terms is:

a. $0.5(7n^2+2n)$ b. $0.5(7n^2-3n)$

c. $0.5(7n^2+3n)$ d. $0.5(7n^2-2n)$

PYQ Dec 23

If n^{th} term of an AP series is $7n-2$, then sum of 'n' terms is:

a. $0.5(7n^2+2n)$ b. $0.5(7n^2-3n)$

c. ✓ $0.5(7n^2+3n)$ d. $0.5(7n^2-2n)$

$t_n = 7n-2$

$a = 7(1)-2 = 5$

$S_n = \frac{n}{2}[a+t_n]$

$= \frac{n}{2}[5+7n-2]$

$= \frac{n}{2}[7n+3] = 0.5[7n^2+3n]$

PYQ Dec 23

Find the value of 'x' for the following data

$1+7+13+19.....+x=225$

a. 56 b. 63

c. 49 d. 42

PYQ Dec 23

Find the value of 'x' for the following data

$1+7+13+19.....+x=225$

a. 56 b. 63

c. 49 d. 42

a) $t_n = 56$, $56 = 1+(n-1)6$, $n = 10.166$ ✗

b) $t_n = 63$, $63 = 1+(n-1)6$, $n = 10.33$ ✗

c) $t_n = 49$, $49 = 1+(n-1)6$, $n = 9$

$a=1,\ d=6,\ S_n=225,\ t_n=?$

$S_n = \frac{n}{2}[a+t_n]$

$225 = \frac{n}{2}[1+t_n]$

$S_9 = \frac{9}{2}[1+49] = 225$ verified

x in the que is actually t_n

so take option as x find respective n and put in above eq. to check

MTP Dec 2023 Series II

Find the product of:

$(243),(243)^{1/6},(243)^{1/36},\ldots\ldots\infty$

a. 1,024 b. 27

c. 729 d. 243

MTP Dec 2023 Series II

Find the product of:

$(243),(243)^{1/6},(243)^{1/36},\ldots\ldots\infty$

a. 1,024 b. 27

c. 729 d. 243

$243 \times 243^{1/6} \times 243^{1/36} \times \ldots\infty$

$(1 + 1/6 + 1/36 + \ldots + \infty)$ ⟶ sum of infinite GP

$= 243$

$a = 1, r = 1/6$

$= 243^{6/5}$

$S_\infty = \frac{a}{1-r} = \frac{1}{1-1/6} = \frac{6}{5}$

$= (3^5)^{6/5} = 3^6 = 729$

PYQ July 21

If the sum of 'n' terms of an AP (Arithmetic Progression) is $2n^2$, the fifth term is ____

a. 20 b. 50

c. 18 d. 25

PYQ July 21

If the sum of 'n' terms of an AP (Arithmetic Progression) is $2n^2$, the fifth term is ____

a. 20 b. 50

c ✓ 18 d. 25

$S_n = 2n^2$

$S_1 = 2(1)^2 = 2 = t_1$

$S_2 = 2(2)^2 = 8 = t_1 + t_2$

$t_1 + t_2 = 8$

$2 + t_2 = 8$

$t_2 = 6$

$d = 6 - 2 = 4$

AP: 2, 6, 10, 14, 18

PYQ Dec 22

If p^{th} term of an AP is q and its q^{th} term is p, then what will be the value of $(p+q)^{th}$ term?

a. 0 b. 1

c. $p+q-1$ d. $2(p+q-1)$

PYQ Dec 22

If p^{th} term of an AP is q and its q^{th} term is p, then what will be the value of $(p+q)^{th}$ term?

a. 0 b. 1

c. $p+q-1$ d. $2(p+q-1)$

if p^{th} term is q and q^{th} term is p

then r^{th} term = $p+q-r$

$(p+q)^{th}$ term = $(p+q)-(p+q)=0$