



L11 Focus
Batch Set...



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Lecture 11

Chp7 Set Relation Functions, Limits & Continuity

CA Foundation Sep 2024 – Focus Batch

Quantitative Aptitude

QA Focus Batch Details

- Number of Live Lectures: 10
- Duration: 1.5 hour each
- Timing: 8.00 am to 9.30 am
- Study Approach:
 - 1 or 2 chapter will be given to you for revision (self/ revision videos) with strict deadline
 - Important MCQs from MTP RTP PYQs of same chapter/s will be taken in the next class LIVE
- Objective:
 - Provide you a planner/ roadmap and a deadline so that you can obtain max. efficiency
 - To help you with different varieties of MCQs in min possible time (incl. latest MTP & RTP)

QA Focus Batch Details

• Live Schedule

Date	Day	Topic
21-Aug-24	Wed	Intro & Plan
22-Aug-24	Thu	Maths for Finance
23-Aug-24	Fri	Blood Relations & Number Series
24-Aug-24	Sat	Direction Test & Seating Arrangements
25-Aug-24	Sun	Statistical Description of Data
26-Aug-24	Mon	Central Tendency and Dispersion
27-Aug-24	Tue	Correlation and Regression & Index Numbers
28-Aug-24	Wed	Ratio Proportion Indices Logarithm
29-Aug-24	Thu	Equations, Linear Inequalities & AP GP
30-Aug-24	Fri	Permutations and Combinations
31-Aug-24	Sat	Set Relations and Functions
Full Syllabus TEST with Negative Marking (FREE)		

Quiz Instructions

- Date: 1st Sep 2024, Sunday
- Time: 11 am
- Real Exam Pattern with Negative Marking
- Score and Detailed Solution of Entire Paper will be visible instantly once quiz is submitted
- Quiz will remain open till 1st Sep 2024 Midnight

CA FOUNDATION SEP 24

FULL SYLLABUS
100 MARKS *Free Test*
QUANTITATIVE APTITUDE

**1st Sep**
11:00 AM

✓ Full Syllabus

✓ Time Bound

✓ With Negative Marking

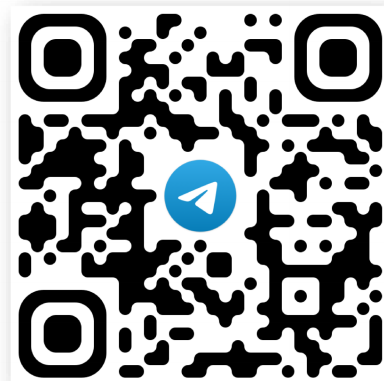
✓ Toppers will get Prizes

**CA PRANAV POPAT**

Read captions to know How to Register

How to Join the Quiz

- Join My Telegram Channel: learnwithpranav using the given QR code or link in description
- Be Ready with your device 5 mins before quiz OPEN time (11 am – 1st Sep)
- Quiz Link will be shared exactly at 11 am
- Click the link and Fill Registration form - Full Name, Mobile Number, Email Address, Location
- Once you press Register button, Quiz will start automatically along with 2 hours of timer.



t.me/learnwithpranav

How to make best use of this Batch

- Do Revision of Chapter Self/ Revision Videos before LIVE Session of Focus Batch
- Attend Focus Batch Session Live to know good variety of MCQs along with exam oriented tips and quick motivation

QA Focus Batch Planner

- Planner is created in Google Sheet where day wise tasks are updated along with links, also all the handwritten pdf of focus batch will be added
- Link for the same is given in description, Live Chat and Pinned Comments

Lecture Tracker							
CA FND QA (Math, LR & Stats) Focus Batch - Sep 2024 Exam by CA. Pranav Popat							
Day	Date	Day	Chapter	Focus Batch/ Revision Topic	Duration	Link	Handwritten PD
2	22-Aug-24	Thu	4	L2 Focus Batch - Maths for Finance	1:37 hours	PLAY VIDEO	DOWNLOAD
2	22-Aug-24	Thu	12	Revision Video - Chp12 Blood Relations	1:24 hours	PLAY VIDEO	DOWNLOAD
2	22-Aug-24	Thu	9	Revision Video - Chp9 Number Series, Coding...	1:15 hours	PLAY VIDEO	DOWNLOAD
3	23-Aug-24	Fri	12 & 9	L3 Focus Batch - Blood Relation + Chp9	1:25 hours	PLAY VIDEO	DOWNLOAD
3	23-Aug-24	Fri	10	Revision Video - Chp10 Direction Test	1:11 hours	PLAY VIDEO	DOWNLOAD
3	23-Aug-24	Fri	11	Revision Video - Chp11 Seating Arrangement	1:48 hours	PLAY VIDEO	DOWNLOAD
4	24-Aug-24	Sat	10 & 11	L4 Focus Batch - Direction Test & Seating Arr.	1:45 hours	PLAY VIDEO	DOWNLOAD
4	24-Aug-24	Sat	13	Revision Video - Chp13 Statistical Descp. of Data	3:06 hours	PLAY VIDEO	DOWNLOAD
5	25-Aug-24	Sun	13	L5 Focus Batch - Stat. Descp. of Data + Sampling	1:01 hours	PLAY VIDEO	DOWNLOAD
5	25-Aug-24	Sun	14	Revision Video - Chp14 Meas. of Central Tendency & Dispersion	3:02 hours	PLAY VIDEO	DOWNLOAD
6	26-Aug-24	Mon	14	L6 Focus Batch - Meas. of Central Tendency & Dispersion	1:25 hours	PLAY VIDEO	DOWNLOAD
6	26-Aug-24	Mon	17	Revision Video - Chp17 Correlation & Regression	2:43 hours	PLAY VIDEO	DOWNLOAD
6	26-Aug-24	Mon	18	Revision Video - Chp18 Index Numbers	1:43 hours	PLAY VIDEO	DOWNLOAD
7	27-Aug-24	Tue	17 & 18	L7 Focus Batch - Correlation and Regression & Index Numbers	1:12 hours	PLAY VIDEO	DOWNLOAD
7	27-Aug-24	Tue	1	Revision Video - Chp1 Ratio, Proportion, Indices, Logarithm	1:31 hours	PLAY VIDEO	DOWNLOAD
8	28-Aug-24	Wed	1	L8 Focus Batch - Ratio, Proportion, Indices, Logarithm		PLAY VIDEO	
8	28-Aug-24	Wed	2	Revision Video - Chp2 Equations	1:28 hours	PLAY VIDEO	DOWNLOAD
8	28-Aug-24	Wed	3	Revision Video - Chp3 Linear Inequalities	1:09 hours	PLAY VIDEO	DOWNLOAD
8	28-Aug-24	Wed	6	Revision Video - Chp6 Sequence and Series (AP GP)	1:45 hours	PLAY VIDEO	DOWNLOAD



#1 1dayspledge

#focusbatch #cafoundationsep2024

let's get started.

Chp7 Set Relation Functions, Limits & Continuity

RTP Sep 2024 (Ans: c)/ MTP Sep 2024 – I

10. If $f(x) = x+2$, $g(x) = 7^x$, then $g \circ f(x) = \underline{\hspace{2cm}}$

- (a) $7^x \cdot x + 2 \cdot 7^x$
- (b) 7^{x-2}
- (c) $49(7^x)$
- (d) none of these

$$g \circ f(x) = g[f(x)]$$

$$= 7^{(x+2)}$$

$$= 7^x \cdot 7^2$$

$$= 49(7^x)$$



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MTP Sep 2024 – II (Ans: d)

22. If $X = \{a, b, c, d\}$; the elements of power set $P(X)$ are

- (a) $\Phi, \{a\}, \{b\}, \{c\}, \{d\}, \{a, b\}, \{a, c\}, \{a, d\}, \{b, c\}, \{b, d\}, \{c, d\}$ (11)
- (b) $\{a, b, c\}, \{a, b, d\}, \{a, c, d\}, \{b, c, d\}$ (4)
- (c) $\{a, b, c, d\}$ (1)
- (d) \checkmark None of the above / all of these

$$\{a, b, c\} \{a, c, d\} \{a, b, d\} \\ \{b, c, d\} \{a, b, c, d\}$$

$$\text{no. of elements of power set} = 2^n$$

$$= 2^4 = 16$$



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MTP Sep 2024 – II (Ans: b, given ans is d)

23. $X = \{x, y, w, z\}$; $Y = \{1, 2, 3, 4\}$; $H = \{(x, 1); (y, 2); (y, 3); (z, 4); (x, 4)\}$

- (a) H is a function from x to y
 (b) ✓ H is not a function from x to y
 (c) H is a relation from y to x
 (d) None of these

↙
 not a function

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MTP Sep 2024 – II (Ans: b)

36. What is the value of $\lim_{y \rightarrow 2} \frac{y^2 - 4}{y - 2}$

- (a) 2
 (b) ✓ 4
 (c) 1
 (d) 0

$$\lim_{y \rightarrow 2} \left(\frac{y^2 - 4}{y - 2} \right)$$

$$\lim_{y \rightarrow 2} \frac{(y+2)(y-2)}{y-2} = \lim_{y \rightarrow 2} (y+2)$$

$$f(2) = 2+2 = 4$$

$$\lim_{y \rightarrow 2^-} y+2 = 4$$

$$\lim_{y \rightarrow 2^+} y+2 = 4$$

MCQ Compiler – Relations - PYQ

PYQ June 24

- (8) Consider the following relations on
 B $A = \{1, 2, 3\}$, $R = \{(1, 1), (1, 2), (1, 3), (3, 3)\}$,
 $S = \{(1, 1), (1, 2), (2, 1), (2, 2), (3, 3)\}$,
 $T = \{(1, 1), (1, 2), (2, 2), (2, 3)\}$ and $\Phi = \text{empty set}$. Which one of these forms an equivalence equation?

- ☒ a. R ☒ b. S
 c. T d. Φ

$$R = (1,1), (1,2), (1,3), (3,3)$$

not reflexive, not symm

$$S = (1,1), (1,2), (2,1), (2,2), (3,3)$$

Yes reflex, Yes symm, Yes trans.



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MCQ Compiler – Limits & Continuity - PYQ

PYQ June 24

- (1) The $\lim_{x \rightarrow 2} \frac{x^2 - 4x + 4}{x - 2} = \underline{\hspace{2cm}}$

- ☒ a. 0 ☐ b. 1
 c. 2 d. 0.5

$$\frac{x^2 - 2x - 2x + 4}{x - 2} = \frac{x(x - 2) - 2(x - 2)}{x - 2}$$



$$= \frac{(x - 2)^2}{x - 2} = x - 2$$

$$\lim_{x \rightarrow 2} (x - 2) = 0$$

MCQ Compiler – Sets - PYQ

PYQ Jan. 21

- (9) The number of integers from 1 to 100 which are neither divisible by 3 nor by 5 nor by 7 is

☆ a. 67 b. 55
c. 45 d. 33

A: divisible by 3 $n(A) = 33$

B: divisible by 5 $n(B) = 20$

C: divisible by 7 $n(C) = 14$

$$n(A \cup B \cup C) = n(A) + n(B) + n(C) - n(A \cap B) - n(B \cap C) - n(A \cap C) + n(A \cap B \cap C)$$

$$n(A \cap B) = 6, n(B \cap C) = 2, n(A \cap C) = 4, n(A \cap B \cap C) = 0$$

$$n(A \cup B \cup C) = 33 + 20 + 14 - 6 - 2 - 4 + 0 = 55$$

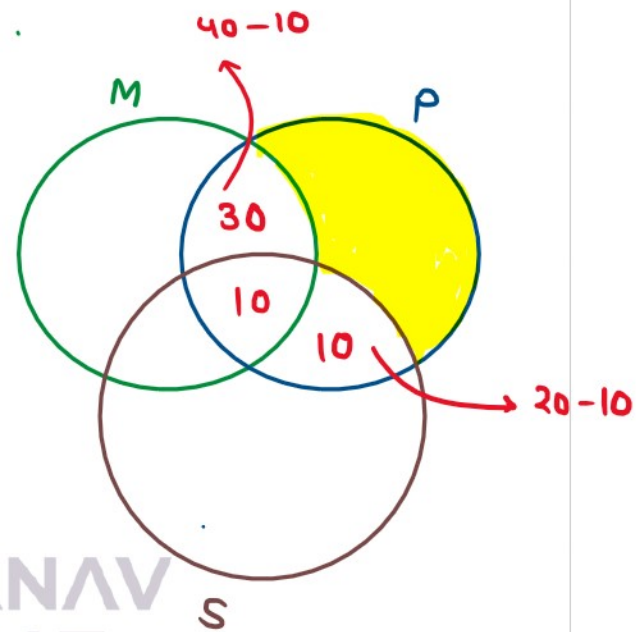
$$n(A \cup B \cup C)' = 100 - 55 = 45$$

MCQ Compiler – Sets - MTP

MTP Dec 2023 Series II

- (29) From a group of 200 persons, 100 are interested in music, 70 in photography and 40 in swimming, furthermore 40 are interested in both music and photography, 30 in both music and swimming, 20 in photography and swimming and 10 in all the three. How many are interested in photography but not in music and swimming?

a. 30 b. 15
c. 25 d. 20



$$n(P \cap M' \cap S') = n(\text{only } P) = 70 - 30 - 10 - 10 = 20$$

MCQ Compiler – Relations – PYQ/ MTP Sep 2024 – I

PYQ Dec. 22

(5) Let $A = (1, 2, 3)$ and consider the relation $R =$ C $\{(1, 1), (2, 2), (3, 3), (1, 2), (2, 3), (1, 3)\}$

☆

Then R is:

- a. Symmetric and transitive α
 b. Reflexive but not transitive α
 c. ☒ Reflexive but not symmetric
 d. Neither symmetric, nor transitive α

Yes reflex.

not-symm

Yes trans

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MCQ Compiler – Relations - PYQ

PYQ Jun 23

(6) Given the relation $R = \{(1, 2), (2, 3)\}$ on the set $A = \{1, 2, 3\}$, the minimum number of ordered pairs which when added to R make it equivalence relation is

B ☆

- a. 5 ☒ b. 7
 c. 6 d. 8

$\{(1, 1), (2, 2), (3, 3), (1, 2), (2, 1), (1, 3), (3, 1), (2, 3), (3, 2)\}$

Equivalence \leftarrow reflex
 symm
 trans

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Total = 9
 given = 2
 Required = 7

MCQ Compiler – Functions - PYQ

PYQ July 21

(12) If $f(x) = x^2 - 1$ and $g(x) = |2x + 3|$, then

B

☆

 $[f \circ g(3) - g \circ f(-3)]$ is ?

a. 71

✓ b. 61

c. 41

d. 51

$$f \circ g(3) : g(3) = |2(3) + 3| = |9| = 9$$

$$= f(9) = 9^2 - 1 = 80$$

$$g \circ f(-3) : f(-3) = (-3)^2 - 1 = 8$$

$$g(8) = |2(8) + 3| = 19$$

$$80 - 19 = 61$$

MCQ Compiler – Functions - MTP

MTP June 24 Series II

(30) Let R is the set of real numbers such that the function $f : R \rightarrow R$ and $g : R \rightarrow R$ aredefined by $f(x) = x^2 + 3x + 1$ and $g(x) = 2x - 3$ Find $(f \circ g)$:a. $4x^2 + 6x + 1$ b. $x^2 + 6x + 1$ ✓ c. $4x^2 - 6x + 1$ d. $x^2 - 6x + 1$ $f \circ g =$

$$(2x-3)^2 + 3(2x-3) + 1$$

$$= 4x^2 + 9 - 12x + 6x - 9 + 1$$

$$= 4x^2 - 6x + 1$$

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