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MATHEMATICS · EAPCET (EAMCET)

Partial Fractions

Previous Year Questions with answers

128 questions · **121** papers · **2010–2026** · newest paper first

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What is in this PDF: every Partial Fractions question we hold from past AP and TS EAPCET (called EAMCET until 2020 in Andhra Pradesh and 2023 in Telangana) papers, with its options and answer. Where an answer comes from a source other than the official final key, it says so next to the answer.

Step-by-step solutions for every question are free in the EdLoop EAPCET app (Google Play) and on app.edloop.in. More chapters: pyq.edloop.in/free-pdfs/

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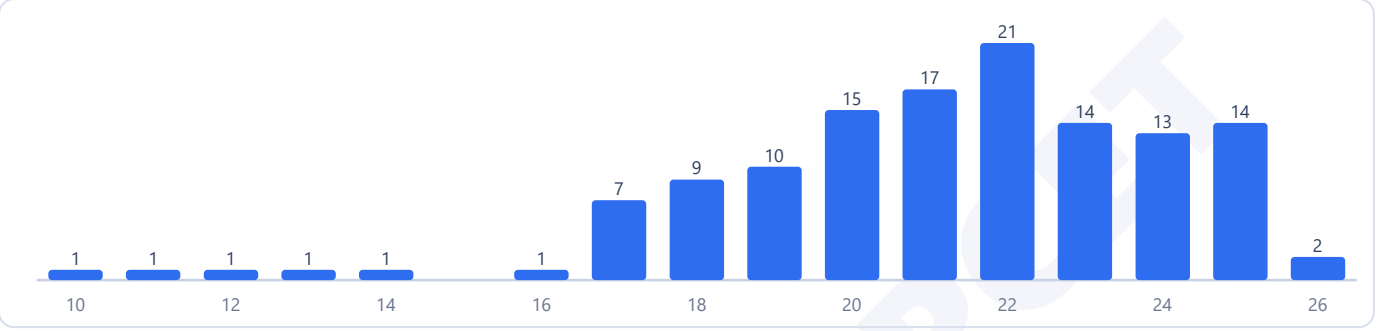
Chapter at a glance

1%	128	58 of 77	128 / 0
of Mathematics questions, 2022–2026	questions, 2010–2026	papers asked it, 2022–2026	MCQ / numerical, 2010–2026

Trend. Falling: 0.6 questions per paper in 2024–2026 against 1.1 in 2022–2023.

Questions per year



Counts are the questions we hold: 128 in 121 papers. No question in this chapter was found repeated across papers.

Most-asked topics in this chapter (2010–2026)

Partial Fractions	128

How often it comes up

Partial Fractions functions as a compact, algebraic decomposition tool with steady representation in the mathematics section. Over the expansive testing history from 2010 to 2026, Partial Fractions appeared in 121 out of 149 evaluated exam papers, supplying 128 questions to average 0.9 questions per paper and a 1.1 percent subject share. In modern examination sessions between 2022 and 2026, the chapter yielded 64 questions across 77 sittings, appearing in 58 papers to record an average of 0.8 questions per paper and a 1.0 percent subject share. This positions the unit at rank 25 of 29 mathematics chapters.

While the topic is tested every year, it does not feature in every sitting, being absent from nineteen papers out of 77 between 2022 and 2026. Across the three most recent exam years from 2024 to 2026, question writers set 29 questions across 46 papers (present in 29 papers, averaging 0.6 per test and a 0.8 percent share). In the preceding period from 2010 through 2021, the topic provided 64 questions across 72 sittings (present in 63 papers, averaging 0.9 per test and a 1.1 percent share). Evaluating the historical trend, comparing early testing with the last three years shows the share is about the same, and comparing recent testing with the last three years also shows the share is about the same. At the regional level from 2022 to 2026, Andhra Pradesh tests included 35 questions across 48 papers (34 papers with questions, 0.7 per test, 0.9 percent share), whereas Telangana tests included 29 questions across 29 papers (24 papers with questions, 1.0 per test, 1.3 percent share).

Most-asked topics

The curriculum organizes this material under a single syllabus heading, focusing on distinct denominator factorizations and improper rational conversions:

- **Rational Fraction Decomposition**: Encompassing all 128 historical questions, with 64 delivered in recent sessions (tested through 2026). Core categories include non-repeated linear factors, repeated linear factors, non-repeated irreducible quadratic factors, repeated quadratic expressions, and preliminary polynomial division for improper rational expressions.

What the questions look like

EAPCET problems on partial fractions test algebraic efficiency and shortcut techniques for extracting numerator constants.

A classic problem presents a rational expression whose denominator factors into four distinct linear terms or two irreducible quadratic terms. Candidates are asked to determine a linear combination of the decomposition constants, such as A plus B plus C plus D. Another frequent structure involves repeated linear denominators, where candidates use repeated substitution or algebraic division to find numerators associated with descending powers. Improper fractions also appear regularly, requiring students to divide the numerator polynomial by the denominator before decomposing the remainder fraction.

How to practise it

Master the Heaviside cover-up method for non-repeated linear factors. To find the constant above x minus a, cover the factor x minus a in the original denominator and evaluate the remaining expression at x equals a. This provides immediate answers without expanding systems of linear equations.

For repeated linear factors like x minus a raised to the power n in the denominator, substitute x minus a equals y into the numerator polynomial, expand in powers of y, and divide each term by y to the power n to read off all partial fraction constants directly. For irreducible quadratic factors x squared plus a squared, assign a linear numerator A x plus B, clear denominators, and equate coefficients of like powers or substitute convenient test values like zero, one, or negative one. Always check degrees first: if the numerator degree is greater than or equal to the denominator degree, perform long division before decomposing.

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Q1 AP EAPCET 2026 · 15 May · Shift 1 MCQ

If $\frac{3x^2+x+2}{(3x^2+x+4)(3x^2+x+1)} = \frac{Ax+B}{3x^2+x+4} + \frac{Cx+D}{3x^2+x+1}$, then $(A+B)+(C+D) =$

(A) $\frac{1}{3}$
(B) $\frac{2}{3}$
(C) 1
(D) $\frac{3}{2}$

Answer: (C) 1 · The council's preliminary key

Q2 TS EAPCET 2026 · 9 May · Shift 2 MCQ

$$\frac{2x^3+x-3}{x^4-5x^2+4} =$$

(A) $\frac{5(x-1)}{4(x^2-3x+2)} + \frac{3x+1}{4(x^2+3x+2)}$
(B) $\frac{5(x+1)}{4(x^2-3x+2)} + \frac{3x-1}{4(x^2+3x+2)}$
(C) $\frac{2}{x-1} + \frac{5}{4(x-2)} - \frac{1}{x+1} + \frac{7}{4(x+2)}$
(D) $\frac{5}{4(x-2)} - \frac{1}{x+1} + \frac{7}{4(x+2)}$

Answer: (D) $\frac{5}{4(x-2)} - \frac{1}{x+1} + \frac{7}{4(x+2)}$ · The council's preliminary key

Q3 AP EAPCET 2025 · 27 May · Shift 1 MCQ

If $\frac{x^2}{(x^2+2)(x^4-1)} = \frac{A}{x^2-1} + \frac{B}{x^2+1} + \frac{C}{x^2+2}$, then $A+B-C =$

(A) 0
(B) $\frac{4}{3}$
(C) $\frac{3}{4}$
(D) 2

Answer: (B) $\frac{4}{3}$ · The council's preliminary key

Q4 AP EAPCET 2025 · 26 May · Shift 1 MCQ

If $\frac{x^4}{(x-1)(x-2)} = f(x) + \frac{A}{x-1} + \frac{B}{x-2}$, then $f(-2)+A+B =$

(A) 32
(B) 28
(C) 22
(D) 20

Answer: (D) 20 · The council's preliminary key

Q5 AP EAPCET 2025 · 26 May · Shift 2 MCQ

If $\frac{2x^4-3x^2+4}{(x^2+1)(x^2+2)} = a + \frac{px+q}{x^2+1} + \frac{mx+n}{x^2+2}$, then $\frac{n}{q} =$

(A) $p+m-a$
(B) $\frac{p+m}{a}$
(C) $\frac{a}{p+m}$
(D) $p+m+a$

Answer: (A) $p+m-a$ · The council's preliminary key

Q6 AP EAPCET 2025 · 24 May · Shift 1 MCQ

If $\frac{3x^3-7x+1}{(x-2)^5}=\frac{A}{x-2}+\frac{B}{(x-2)^2}+\frac{C}{(x-2)^3}+\frac{D}{(x-2)^4}+\frac{E}{(x-2)^5}$, then $A(B+C+D+E)=$

(A) 0
(B) 64
(C) 348
(D) 256

Answer: (A) 0 · The council's preliminary key

Q7 AP EAPCET 2025 · 23 May · Shift 2 MCQ

If $\frac{3x+1}{(x-1)(x^2+2)}=\frac{A}{x-1}+\frac{Bx+C}{x^2+2}$, then $5(A-B)=$

(A) $A+C$
(B) $8C$
(C) $C+8$
(D) $\frac{C}{8}$

Answer: (B) $8C$ · The council's preliminary key

Q8 AP EAPCET 2025 · 22 May · Shift 1 MCQ

If $\frac{x+1}{(x-1)^2(x^2+1)}=\frac{A}{x-1}+\frac{B}{(x-1)^2}+\frac{Cx+D}{x^2+1}$, then $\sqrt{3A^2+4D^2+5C^2+B^2}=$

(A) $\frac{3}{2}$
(B) $\frac{1}{2}$
(C) 1
(D) 2

Answer: (D) 2 · The council's preliminary key

Q9 AP EAPCET 2025 · 22 May · Shift 2 MCQ

If $\frac{ax+5}{(x^2+b)(x+3)}=\frac{x+21}{12(x^2+b)}+\frac{c}{12(x+3)}$, then $b^2=$

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(A) $a^3 - c$

(B) $a^2 + c$

(C) $a - c$

(D) $a + c$

Answer: (A) $a^3 - c$ · The council's preliminary key

Q10 AP EAPCET 2025 · 21 May · Shift 1 MCQ

Let $H(x) = 3x^4 + 6x^3 - 2x^2 + 1$ and $g(x)$ be a linear polynomial. If

$$\frac{H(x)}{(x-1)(x+1)(x-2)} = f(x) + \frac{g(x)}{(x-1)(x+1)(x-2)},$$

then $H(-1) + 2H(2) - 3H(1) =$

(A) $f(-1) + 2f(2) - 3f(1)$

(B) $H(-1) + f(2) + g(3)$

(C) $g(-1) + 2g(2) - 3g(1)$

(D) $H(1) + 2f(2) - g(1)$

Answer: (C) $g(-1) + 2g(2) - 3g(1)$ · The council's preliminary key

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Q11 TS EAPCET 2025 · 4 May · Shift 1 MCQ

If $\frac{x+1}{x^3(x-1)} = \frac{a}{x} + \frac{b}{x^2} + \frac{c}{x^3} + \frac{d}{x-1}$ then

(A) $a = b = c = -d$

(B) $a = b = 2c = -d$

(C) $a = 2b = c = -d$

(D) $a = b = 2c = d$

Answer: (B) $a = b = 2c = -d$ · The council's preliminary key

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Q12 TS EAPCET 2025 · 4 May · Shift 2 MCQ

If $\frac{3x+1}{(x-1)^2(x^2+1)} = \frac{A}{x-1} + \frac{B}{(x-1)^2} + \frac{Cx+D}{x^2+1}$, then $2(A - C + B + D) =$

(A) 0

(B) 1

(C) 2

(D) -1

Answer: (D) -1 · The council's preliminary key

Q13 TS EAPCET 2025 · 3 May · Shift 1 MCQ

If $\frac{x+3}{(x+1)(x^2+2)} = \frac{a}{x+1} + \frac{bx+c}{x^2+2}$ then $a - b + c =$

(A) 0
(B) 1
(C) 3
(D) 2

Answer: (C) 3 · The council's preliminary key

Q14 TS EAPCET 2025 · 3 May · Shift 2 MCQ

If $\frac{x^2+1}{(x^2+2)(x^2+3)} = \frac{Ax+B}{x^2+2} + \frac{Cx+D}{x^2+3}$, then $A+B+C+D =$

(A) 0
(B) 1
(C) -1
(D) 6

Answer: (B) 1 · The council's preliminary key

Q15 TS EAPCET 2025 · 2 May · Shift 1 MCQ

If $\frac{x^3+3}{(x-3)^3} = a + \frac{b}{x-3} + \frac{c}{(x-3)^2} + \frac{d}{(x-3)^3}$ then $(a+d)-(b+c) =$

(A) 49
(B) 15
(C) -30
(D) -5

Answer: (D) -5 · The council's preliminary key

Q16 TS EAPCET 2025 · 2 May · Shift 2 MCQ

If $\frac{x^2-3}{(x+2)(x^2+1)} = \frac{A}{x+2} + \frac{Bx+C}{(x^2+1)}$ then $3A+2B-C =$

(A) $\frac{8}{5}$
(B) $\frac{16}{5}$
(C) $\frac{3}{5}$
(D) $\frac{19}{5}$

Answer: (D) $\frac{19}{5}$ · The council's preliminary key

Q17 AP EAPCET 2024 · 23 May · Shift 1 MCQ

$\frac{4x^2+5}{(x-2)^4} = \frac{A}{(x-2)} + \frac{B}{(X-2)^2} + \frac{C}{(X-2)^3} + \frac{D}{(X-2)^4}$ then $\sqrt{\frac{A}{C} + \frac{B}{C} + \frac{D}{C}} =$

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(A) $\frac{\sqrt{29}}{4}$
(B) $\frac{\sqrt{23}}{4}$
(C) $\frac{5}{4}$
(D) $\frac{4}{5}$

Answer: (C) $\frac{5}{4}$ · The council's preliminary key

Q18 AP EAPCET 2024 · 22 May · Shift 2 MCQ

If $\frac{13x+43}{2x^2+17x+30} = \frac{A}{2x+5} + \frac{B}{x+6}$ then $A+B =$

(A) 8
(B) 18
(C) 3
(D) 5

Answer: (A) 8 · The council's preliminary key

Q19 AP EAPCET 2024 · 21 May · Shift 1 MCQ

If $\frac{1}{(3x+1)(x-2)} = \frac{A}{3x+1} + \frac{B}{x-2}$ and $\frac{x+1}{(3x+1)(x-2)} = \frac{C}{3x+1} + \frac{D}{x-2}$, then

(A) $A+3B=0,\ A:C=1:3,\ B:D=2:3$
(B) $A+3B=0,\ A:C=3:1,\ B:D=3:2$
(C) $A-3B=0,\ A:C=3:2,\ B:D=1:3$
(D) $A+3B=0,\ A:C=3:2,\ B:D=1:3$

Answer: (D) $A+3B=0,\ A:C=3:2,\ B:D=1:3$ · The council's preliminary key

Q20 AP EAPCET 2024 · 21 May · Shift 2 MCQ

If

$$\frac{x+2}{(x^2+3)(x^4+x^2)(x^2+2)} = \frac{Ax+B}{x^2+3} + \frac{Cx+D}{x^2+2} + \frac{Ex^3+Fx^2+Gx+H}{x^4+x^2}$$

then $(E+F)(C+D)(A) =$

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

Answer: (D) $\frac{1}{4}$ · The council's preliminary key

Q21 AP EAPCET 2024 · 20 May · Shift 1 MCQ

If $\frac{A}{x-a} + \frac{Bx+C}{x^2+b^2} = \frac{1}{(x-a)(x^2+b^2)}$ then $C =$

(A) $\frac{-1}{a^2+b^2}$
(B) $\frac{1}{a^2+b^2}$
(C) $\frac{-a}{a^2+b^2}$
(D) $\frac{a}{a^2+b^2}$

Answer: (C) $\frac{-a}{a^2+b^2}$ · The council's preliminary key

Q22 AP EAPCET 2024 · 20 May · Shift 2 MCQ

If $\frac{x^2+3}{x^4+2x^2+9} = \frac{Ax+B}{x^2+ax+b} + \frac{Cx+D}{x^2+cx+b}$ then $aA+bB+cC+D =$

(A) 1
(B) 0
(C) -1
(D) 2

Answer: (D) 2 · The council's preliminary key

Q23 AP EAPCET 2024 · 19 May · Shift 2 MCQ

If $\frac{1}{x^4+1} = \frac{Ax+B}{x^2+\sqrt{2}x+1} + \frac{Cx+D}{x^2-\sqrt{2}x+1}$ then $BD-AC =$

(A) $\frac{3}{8}$
(B) $\frac{1}{8}$
(C) 1
(D) 0

Answer: (A) $\frac{3}{8}$ · The council's preliminary key

Q24 AP EAPCET 2024 · 18 May · Shift 1 MCQ

The absolute value of the difference of the coefficients of x^4 and x^6 in the expansion of $\frac{2x^2}{(x^2+1)(x^2+2)}$ is

(A) $\frac{13}{4}$
(B) $\frac{1}{4}$
(C) $\frac{9}{4}$
(D) 1

Answer: (A) $\frac{13}{4}$ · The council's preliminary key

Q25 TS EAPCET 2024 · 11 May · Shift 1 MCQ

If $\frac{x^2}{2x^4+7x^2+6} = \frac{Ax+B}{x^2+a} + \frac{Cx+D}{ax^2+3}$, then $A+B+C-2D =$

(A) $2a$

(B) $-2a$

(C) $-4a$

(D) $4a$

Answer: (D) $4a$ · The council's preliminary key

Q26 TS EAPCET 2024 · 10 May · Shift 1 MCQ

If $\frac{2x^3+1}{2x^2-x-6} = ax + b + \frac{A}{px-2} + \frac{B}{2x+q}$, then $51\,apB =$

(A) $23bqA$

(B) $69bqA$

(C) $7bqA$

(D) $17bqA$

Answer: (A) $23bqA$ · The council's preliminary key

Q27 TS EAPCET 2024 · 10 May · Shift 2 MCQ

If $\frac{1}{x^4+x^2+1} = \frac{Ax+B}{x^2+ax+1} + \frac{Cx+D}{x^2-ax+1}$ then $A+B-C+D=$

(A) a

(B) 2a

(C) 3a

(D) 4a

Answer: (B) 2a · The council's preliminary key

Q28 TS EAPCET 2024 · 9 May · Shift 1 MCQ

If $\frac{x^4}{(x^2+1)(x-2)} = f(x) + \frac{Ax+B}{x^2+1} + \frac{C}{x-2}$, then $f(14) + 2A - B =$

(A) $5C$

(B) $4C$

(C) $6C$

(D) $7C$

Answer: (A) $5C$ · The council's preliminary key

Q29 TS EAPCET 2024 · 9 May · Shift 2 MCQ

If $\frac{3x^4-2x^2+1}{(x-2)^4} = A + \frac{B}{x-2} + \frac{C}{(x-2)^2} + \frac{D}{(x-2)^3} + \frac{E}{(x-2)^4}$, then $2A+3B-C-D+E=$

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(A) 0

(B) 1

(C) -11

(D) -39

Answer: (D) -39 · The council's preliminary key

Q30 AP EAPCET 2023 · 18 May · Shift 1 MCQ

If $\frac{x^2-7x+2}{x^4+3x^2+4}=\frac{Ax+B}{x^2+ax+2}+\frac{Cx+D}{x^2+bx+2}$ and $a>b$, then $B+D=$

(A) $a+b$

(B) $2a+b$

(C) $a+2b$

(D) $a-b$

Answer: (B) $2a+b$ · The council's preliminary key

Q31 AP EAPCET 2023 · 17 May · Shift 1 MCQ

If $\frac{17x-2}{12x^2-x-20}=\frac{A}{ax+5}+\frac{B}{3x+b}$ then $a.A+b.B=$

(A) 0

(B) 4

(C) 7

(D) 10

Answer: (B) 4 · The council's preliminary key

Q32 AP EAPCET 2023 · 17 May · Shift 2 MCQ

If $\frac{6x^3+7x^2-14x+11}{6x^3+x^2-10x+3}=a+\frac{b}{x+p}+\frac{c}{qx+3}+\frac{d}{3x+p}$, then $\frac{a+b}{p+q}=$

(A) 2

(B) 3

(C) $-\frac{2}{5}$

(D) $\frac{2}{3}$

Answer: (A) 2 · The council's preliminary key

Q33 AP EAPCET 2023 · 17 May · Shift 2 MCQ

If $\frac{d}{dx}\left(\frac{x^2}{(x+2)(2x+3)}\right)=\frac{A}{(x+2)^2}+\frac{B}{(2x+3)^2}$, then $A+B=$

(A) $1/2$
(B) -5
(C) $-3/2$
(D) $9/4$

Answer: (B) -5 · The council's preliminary key

Q34 AP EAPCET 2023 · 16 May · Shift 1 MCQ

If $\frac{x^4-6x^3+9x^2+5x-20}{x^2-x-2} = f(x) + \frac{a}{x+p} + \frac{b}{x+q}$, then $2(a+b) =$

(A) $f(7)$
(B) $f(6)$
(C) $f(5)$
(D) $f(4)$

Answer: (D) $f(4)$ · The council's preliminary key

Q35 AP EAPCET 2023 · 16 May · Shift 2 MCQ

If $\frac{-x^2+6x+1}{(x-1)^2(x^2+2)} = \frac{A}{x-1} + \frac{B}{(x-1)^2} + \frac{Cx-3}{x^2+2}$, then $A+B+C =$

(A) 7
(B) 5
(C) 3
(D) 2

Answer: (D) 2 · The council's preliminary key

Q36 AP EAPCET 2023 · 15 May · Shift 1 MCQ

If $\frac{2x^2+5x+6}{(x+2)^3} = \frac{a}{x+2} + \frac{b}{(x+2)^2} + \frac{c}{(x+2)^3}$, then $a.b + b.c + c.a =$

(A) 28
(B) 14
(C) -10
(D) -8

Answer: (C) -10 · The council's preliminary key

Q37 AP EAPCET 2023 · 15 May · Shift 2 MCQ

If $\frac{x+2}{x^2-3}$ is one of the partial fractions of $\frac{3x^3-x^2-2x+17}{x^4+x^2-12}$, then the other partial fraction of it is

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(A) $\frac{2x+3}{x^2-4}$
(B) $\frac{3x+2}{x^2+4}$
(C) $\frac{2x-3}{x^2+4}$
(D) $\frac{3x-2}{x^2-4}$

Answer: (C) $\frac{2x-3}{x^2+4}$ · The council's preliminary key

Q38 TS EAMCET 2023 · 14 May · Shift 1 MCQ

If $\frac{3x+2}{(x+1)(2x^2+3)} = \frac{A}{x+1} + \frac{Bx+C}{2x^2+3}$, then $A - B + C =$

(A) 2
(B) 1
(C) 3
(D) 6

Answer: (A) 2 · The council's preliminary key

Q39 TS EAMCET 2023 · 14 May · Shift 2 MCQ

If the coefficient of x^4 in the expansion of $\frac{x}{(x-1)^2(x-2)}$ is $\frac{m}{n}$ and $|m|, |n|$ are coprimes, then $\sqrt{|m+n|} =$

(A) 9
(B) $\sqrt{33}$
(C) 7
(D) $6\sqrt{2}$

Answer: (B) $\sqrt{33}$ · The council's preliminary key

Q40 TS EAMCET 2023 · 13 May · Shift 1 MCQ

If $\frac{6x^4+13x^3+2x^2-x+3}{2x^2+3x-2} = f(x) + \frac{A}{ax-1} + \frac{B}{x+b}$, then $f(1) + a.B + b.A =$

(A) 8
(B) 12
(C) 4
(D) 6

Answer: (A) 8 · The council's preliminary key

Q41 TS EAMCET 2023 · 13 May · Shift 2 MCQ

If $\frac{2x^3+3x^2+3x+5}{(x^2+1)(x^2+2)}$ is expanded in terms of the powers of x, then the coefficient of x^5 is

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(A) 0

(B) $\frac{-5}{4}$

(C) $\frac{17}{8}$

(D) $\frac{9}{8}$

Answer: (D) $\frac{9}{8}$ · The council's preliminary key

Q42 TS EAMCET 2023 · 12 May · Shift 1 MCQ

If $\frac{x^4}{(x-1)(x-2)(x-3)} = p(x) + \frac{A}{x-1} + \frac{B}{x-2} + \frac{C}{x-3}$, then $p\left(\frac{3}{2}\right) + C =$

(A) 0

(B) 8

(C) $-\frac{17}{2}$

(D) 48

Answer: (D) 48 · The council's preliminary key

Q43 TS EAMCET 2023 · 12 May · Shift 2 MCQ

If $\frac{x+1}{(x^2+1)(x-1)^2} = \frac{Ax+B}{x^2+1} + \frac{C}{x-1} + \frac{D}{(x-1)^2}$, then $A+B+C+D =$

(A) $-\frac{1}{2}$

(B) $\frac{1}{2}$

(C) 1

(D) $\frac{3}{2}$

Answer: (B) $\frac{1}{2}$ · The council's preliminary key

Q44 TS EAMCET 2022 · 20 Jul · Shift 1 MCQ

If $\frac{2x^2-3x+5}{(x-7)^3} = \frac{A}{x-7} + \frac{B}{(x-7)^2} + \frac{C}{(x-7)^3}$, then $2A-3B+C =$

(A) 0

(B) 27

(C) 11

(D) 15

Answer: (C) 11 · The council's preliminary key

Q45 TS EAMCET 2022 · 20 Jul · Shift 1 MCQ

If $\frac{3x^2+ax+3}{(2x+3)(x^2+2)} = \frac{3}{2x+3} + \frac{Bx+C}{x^2+2}$ then $a(B+C) =$

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(A) -2
(B) 3
(C) -3
(D) 2

Answer: (D) 2 · The council's preliminary key

Q46 TS EAMCET 2022 · 20 Jul · Shift 2 MCQ

If $\frac{x-2}{x^2(2x-3)} = \frac{A}{x} + \frac{B}{x^2} + \frac{C}{2x-3}$ then $2(A-C) =$

(A) 3B
(B) 2B
(C) 0
(D) B

Answer: (D) B · The council's preliminary key

Q47 TS EAMCET 2022 · 20 Jul · Shift 2 MCQ

If $\frac{x^2-x+1}{(x^2+1)(x^2+x+1)} = \frac{Ax+B}{x^2+1} + \frac{Cx+D}{x^2+x+1}$ then $A+2B+C+2D =$

(A) 0
(B) 1
(C) -1
(D) 2

Answer: (D) 2 · The council's preliminary key

Q48 TS EAMCET 2022 · 19 Jul · Shift 1 MCQ

If $\frac{42-13x}{x^2+x-6} = \frac{A}{lx+m} + \frac{B}{px+q}$ where $lm > 0$ and $pq < 0$ then $\frac{Alp}{Bmq} =$

(A) $\frac{27}{32}$
(B) $\frac{27}{8}$
(C) $\frac{8}{243}$
(D) $\frac{243}{32}$

Answer: (A) $\frac{27}{32}$ · The council's preliminary key

Q49 TS EAMCET 2022 · 19 Jul · Shift 1 MCQ

If $\frac{3x+5}{(x+1)(2x^2+3)} = \frac{A}{x+1} + \frac{Bx+C}{2x^2+3}$ and $f(x) = Ax^3 + Bx^2 + 7x + C$, then $5C - f'(-2) =$

(A) 19
(B) 15
(C) 4
(D) 34

Answer: (C) 4 · The council's preliminary key

Q50 TS EAMCET 2022 · 19 Jul · Shift 2 MCQ

If $\frac{d}{dx}\left(\frac{2x+1}{(x+1)^2(x-2)}\right) = \frac{A}{(x-2)^2} + \frac{B}{(x+1)^3} + \frac{C}{(x+1)^2}$ then $A+B+C=$

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

Answer: (A) $\frac{-2}{3}$ · The council's preliminary key

Q51 TS EAMCET 2022 · 19 Jul · Shift 2 MCQ

If $\frac{x^2-2}{(x^2+1)(x^2+3)} = \frac{Ax+B}{x^2+1} + \frac{Cx+D}{x^2+3}$ then $D=$

(A) $\frac{-3}{2}$
(B) $\frac{-1}{2}$
(C) 2
(D) $\frac{5}{2}$

Answer: (D) $\frac{5}{2}$ · The council's preliminary key

Q52 TS EAMCET 2022 · 18 Jul · Shift 1 MCQ

If $\frac{x^2-3x+2}{(x-4)(x-3)^2} = \frac{A}{x-4} + \frac{B}{x-3} + \frac{C}{(x-3)^2}$ then $A+B+C=$

(A) 1
(B) 0
(C) -1
(D) 5

Answer: (C) -1 · The council's preliminary key

Q53 TS EAMCET 2022 · 18 Jul · Shift 1 MCQ

If $\frac{x^2+3}{(x^2+1)(x^2+2)} = \frac{Ax+B}{x^2+1} + \frac{Cx+D}{x^2+2}$ then $A+B+C+D=$

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(A) 3
(B) 2
(C) 0
(D) 1

Answer: (D) 1 · The council's preliminary key

Q54 TS EAMCET 2022 · 18 Jul · Shift 2 MCQ

If $\frac{x^2+7}{(x^2+1)(x-2)} = \frac{A}{x-2} + \frac{Bx+C}{x^2+1}$, then the determinant of the matrix $\begin{pmatrix} A & B \\ C & \frac{2}{5} \end{pmatrix}$ is

(A) 5
(B) -5
(C) $\frac{94}{25}$
(D) -2

Answer: (D) -2 · The council's preliminary key

Q55 AP EAPCET 2022 · 8 Jul · Shift 1 MCQ

If $\frac{x}{(x-1)(x^2+1)^2} = \frac{1}{4}\left[\frac{1}{x-1} - \frac{x+1}{x^2+1}\right] + y$, then $y =$

(A) $\frac{1}{2}\left[\frac{1-x}{(x^2+1)^2}\right]$
(B) $\frac{1+x}{3(x^2+1)^2}$
(C) $\frac{1-x}{(x^2-1)^2}$
(D) $\frac{1+x}{(x^2+1)^2}$

Answer: (A) $\frac{1}{2}\left[\frac{1-x}{(x^2+1)^2}\right]$ · The council's preliminary key

Q56 AP EAPCET 2022 · 8 Jul · Shift 2 MCQ

$$\frac{x^2+1}{x^4+4} = \frac{Ax+B}{x^2-2x+2} + \frac{Cx+D}{x^2+2x+2} \Rightarrow 3A+2B+3C =$$

(A) $-D$
(B) D
(C) $2D$
(D) $-2D$

Answer: (C) $2D$ · The council's preliminary key

Q57 AP EAPCET 2022 · 7 Jul · Shift 1 MCQ

If $\frac{4x^3+16x+7}{(x^2+4)^2} = \frac{Ax+B}{x^2+4} + \frac{Cx+D}{(x^2+4)^2}$, then the number of non-zero values in A,B,C,D is

(A) 1
(B) 2
(C) 3
(D) 4

Answer: (B) 2 · The council's preliminary key

Q58 AP EAPCET 2022 · 7 Jul · Shift 2 MCQ

$\frac{x^4}{(x^2+1)(x^2+3)} =$

(A) $\frac{Ax+B}{x^2+1} + \frac{Cx+D}{x^2+3}$ for some A,B,C,D$\in \mathbf{R} \setminus \{0\}$
(B) $\frac{Ax+B}{x^2+1} + \frac{Cx}{x^2+1}$ for some A,B,C$\in \mathbf{R} \setminus \{0\}$
(C) $\frac{Ax}{x^2+1} + \frac{Bx}{x^2+3}$ for some A,B$\in \mathbf{R} \setminus \{0\}$
(D) $1 + \frac{Ax+B}{x^2+1} + \frac{Cx+D}{x^2+3}$ for some A,B,C,D$\in \mathbf{R}$

Answer: (D) $1 + \frac{Ax+B}{x^2+1} + \frac{Cx+D}{x^2+3}$ **for some A,B,C,D**$\in \mathbf{R}$ · The council's preliminary key

Q59 AP EAPCET 2022 · 6 Jul · Shift 1 MCQ

If we resolve the rational fraction $\frac{1}{(1-2x)^2(1-3x)}$ in to partial fractions of the form $\frac{A}{1-3x} + \frac{B}{1-2x} + \frac{C}{(1-2x)^2}$, then what is the $\min\{A, B, C\} =$

(A) 1
(B) 9
(C) -2
(D) -6

Answer: (D) -6 · The council's preliminary key

Q60 AP EAPCET 2022 · 6 Jul · Shift 2 MCQ

If the equivalent partial fraction of $\frac{x^3}{(2x-1)(x+2)(x-3)}$ is given by $A + \frac{B}{2x-1} + \frac{C}{x+2} + \frac{D}{x-3}$, then the value of C is

(A) $1/2$
(B) $-1/50$
(C) $-8/25$
(D) $27/25$

Answer: (C) $-8/25$ · The council's preliminary key

Q61 AP EAPCET 2022 · 5 Jul · Shift 1 MCQ

$\frac{2x^2+1}{x^3-1} = \frac{A}{x-1} + \frac{Bx+C}{x^2+x+1} \Rightarrow 7A + 2B + C =$

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(A) 8
(B) 9
(C) 10
(D) 11

Answer: (B) 9 · The council's preliminary key

Q62 AP EAPCET 2022 · 5 Jul · Shift 2 MCQ

If the equivalent partial fraction of $\frac{x^3}{(2x-1)(x+2)(x-3)}$ is of the form $A+\frac{B}{2x-1}+\frac{C}{x+2}+\frac{D}{x-3}$ then the value of $A+B+C=$

(A) $-8/25$
(B) $4/25$
(C) $-1/50$
(D) $1/2$

Answer: (B) $4/25$ · The council's preliminary key

Q63 AP EAPCET 2022 · 4 Jul · Shift 1 MCQ

If $\frac{x^4+24x^2+28}{(x^2+1)^3}=\frac{Ax+B}{x^2+1}+\frac{Cx+D}{(x^2+1)^2}+\frac{Ex+F}{(x^2+1)^3}$ then the value of A+B+C+D+E+F =

(A) 21
(B) 22
(C) 28
(D) 29

Answer: (C) 28 · The council's preliminary key

Q64 AP EAPCET 2022 · 4 Jul · Shift 2 MCQ

If $\frac{13x+43}{2x^2+17x+30}=\frac{A}{2x+5}+\frac{B}{x+6}$, then $A^2+B^2=$

(A) $22/3$
(B) 52
(C) 34
(D) $18/5$

Answer: (C) 34 · The council's preliminary key

Q65 AP EAPCET 2021 · 5 Oct · Shift 1 MCQ

If $\frac{9}{(x-1)(x+2)^2}=\frac{A}{x-1}+\frac{B}{x+2}+\frac{C}{(x+2)^2}$ then $A-B-C$ is equal to

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(A) 3
(B) 5
(C) -1
(D) 0

Answer: (B) 5 · The council's preliminary key

Q66 AP EAPCET 2021 · 25 Aug · Shift 1 MCQ

If $\frac{x}{(1+x^2)(3-2x)} = \frac{Bx+C}{1+x^2} + \frac{A}{3-2x}$, then '$C$' is

(A) $\frac{2}{3}$
(B) $\frac{1}{13}$
(C) $\frac{-1}{13}$
(D) $\frac{-2}{13}$

Answer: (D) $\frac{-2}{13}$ · The council's preliminary key

Q67 AP EAPCET 2021 · 25 Aug · Shift 2 MCQ

The partial fraction of $\frac{x^2}{x^2+3x-4}$ is _____

(A) $1 + \frac{-16}{5(x+4)} + \frac{1}{5(x-1)}$
(B) $1 + \frac{-1}{x+4} + \frac{1}{x-1}$
(C) $1 + \frac{-13}{5(x+4)} + \frac{1}{5(x-1)}$
(D) $\frac{2}{x+4} + \frac{1}{x-1}$

Answer: (A) $1 + \frac{-16}{5(x+4)} + \frac{1}{5(x-1)}$ · The council's preliminary key

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Q68 AP EAPCET 2021 · 24 Aug · Shift 1 MCQ

Which of the following is an improper rational traction?

(A) $\frac{x^2+1}{(x^2+2)(x^2+x+1)}$
(B) $\frac{x^2+1}{(x+3)(x^2-x+1)}$
(C) $\frac{x}{(x^2+3x+1)}$
(D) $\frac{x^2+1}{x^2-1}$

Answer: (D) $\frac{x^2+1}{x^2-1}$ · The council's preliminary key

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Q69 AP EAPCET 2021 · 24 Aug · Shift 2 MCQ

If $\frac{6x^3+7x^2+6x-3}{(x-1)(x+3)(x^2+1)} = \frac{A}{x-1} + \frac{B}{x+3} + \frac{Cx+D}{x^2+1}$ and $n = A+B+C+D$ and ${}^{50}C_n = {}^{50}C_r$, then $r =$

(A) 40
(B) 43
(C) 35
(D) 42

Answer: (D) 42 · The council's preliminary key

Q70 AP EAPCET 2021 · 23 Aug · Shift 1 MCQ

If $\frac{x^3}{(2x-1)(x+2)(x-3)} = A + \frac{B}{2x-1} + \frac{C}{x+2} + \frac{D}{x-3}$ then $A =$

(A) $\frac{1}{2}$
(B) $\frac{-1}{50}$
(C) $\frac{-8}{25}$
(D) $\frac{27}{25}$

Answer: (A) $\frac{1}{2}$ · The council's preliminary key

Q71 AP EAPCET 2021 · 23 Aug · Shift 2 MCQ

If $\frac{1}{(3-5x)(2+3x)} = \frac{A}{3-5x} + \frac{B}{2+3x}$ then $A+B =$

(A) $\frac{7}{19}$
(B) $\frac{8}{19}$
(C) $\frac{9}{19}$
(D) $\frac{10}{19}$

Answer: (B) $\frac{8}{19}$ · The council's preliminary key

Q72 AP EAPCET 2021 · 20 Aug · Shift 1 MCQ

Given $\frac{3x-2}{(x+1)^2(x+3)} = \frac{A}{x+1} + \frac{B}{(x+1)^2} + \frac{C}{x+3}$ then $4A+2B+4C$

(A) 5
(B) -5
(C) -3
(D) 3

Answer: (B) -5 · The council's preliminary key

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Q73 AP EAPCET 2021 · 20 Aug · Shift 2 MCQ

If $\frac{2x^4-x^3+3x^2-x+4}{x^2-3x+2} = f(x) + \frac{A}{x-1} + \frac{B}{x-2}$ then _____

(A) $f(x) = 2x^2 + 5x + 14,\ A + B = 39$

(B) $f(x) = 2x^2 - 5x + 14,\ A + B = 31$

(C) $f(x) = 2x^2 + 5x + 14,\ A + B = 31$

(D) $f(x) = 2x^2 + 5x + 14,\ A = 4, B = 35$

Answer: (C) $f(x) = 2x^2 + 5x + 14,\ A + B = 31$ · The council's preliminary key

Q74 AP EAPCET 2021 · 19 Aug · Shift 1 MCQ

If $\frac{x^4}{(x-1)(x-2)} = f(x) + \frac{A}{x-1} + \frac{B}{x-2}$, then

(A) $f(x) = x^2 - 3x + 7$

(B) $f(x) = x^2 + 3x + 7$

(C) $A + B = 17$

(D) $A - B = -18$

Answer: (B) $f(x) = x^2 + 3x + 7$ · The council's preliminary key

Q75 AP EAPCET 2021 · 19 Aug · Shift 2 MCQ

Which of the following is a partial fraction of $\frac{-x^2+6x+13}{(3x+5)(x^2+4x+4)} =$

(A) $\frac{3}{3x+5} + \frac{-1}{x+2} + \frac{2}{(x+2)^2}$

(B) $\frac{2}{3x+5} + \frac{-1}{x+2} + \frac{3}{(x+2)^2}$

(C) $\frac{-1}{3x+5} + \frac{2}{x+2} + \frac{3}{(x+2)^2}$

(D) $\frac{3}{3x+5} + \frac{2}{x+2} + \frac{-1}{(x+2)^2}$

Answer: (B) $\frac{2}{3x+5} + \frac{-1}{x+2} + \frac{3}{(x+2)^2}$ · The council's preliminary key

Q76 TS EAMCET 2021 · 6 Aug · Shift 1 MCQ

If $\frac{32x^2 + 186x}{(x^2+1)(x+5)} = \frac{37x+1}{x^2+1} + \frac{\lambda}{x+5}$, then $\frac{\lambda}{2} =$

(A) -5

(B) $\frac{-7}{2}$

(C) $\frac{-3}{2}$

(D) $\frac{-5}{2}$

Answer: (D) $\frac{-5}{2}$ · The council's preliminary key

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Q77 TS EAMCET 2021 · 6 Aug · Shift 2 MCQ

The partial fraction decomposition of $\frac{3x+1}{(x-1)^2(x+2)}$ is

(A) $\frac{4}{3}\frac{1}{(x-1)^2}+\frac{5}{9}\frac{1}{(x-1)}+\frac{5}{9}\frac{1}{x+2}$

(B) $\frac{-5}{9}\left(\frac{1}{x+2}\right)+\frac{4}{3}\cdot\frac{1}{(x-1)^2}+\frac{2}{x-1}$

(C) $\frac{-5}{9}\left(\frac{1}{x+2}\right)+\frac{5}{9}\cdot\frac{1}{x-1}+\frac{4}{3}\cdot\frac{1}{(x-1)^2}$

(D) $\frac{-5}{9}\left(\frac{1}{x+2}\right)+\frac{5}{9}\left(\frac{1}{x-1}\right)+\frac{2}{(x-1)^2}$

Answer: (C) $\frac{-5}{9}\left(\frac{1}{x+2}\right)+\frac{5}{9}\cdot\frac{1}{x-1}+\frac{4}{3}\cdot\frac{1}{(x-1)^2}$ · The council's preliminary key

Q78 TS EAMCET 2021 · 5 Aug · Shift 1 MCQ

If $\frac{1}{(x-1)(x-2)(x-3)}=\frac{A}{x-1}+\frac{B}{x-2}+\frac{C}{x-3}$, and $\frac{x}{(x-1)(x-2)(x-3)}=\frac{P}{x-1}+\frac{Q}{x-2}+\frac{R}{x-3}$ then $A+2B+3C=$

(A) $P+Q+R$

(B) $P+2Q+3R$

(C) $3P+2Q+R$

(D) $AP+BQ+CR$

Answer: (A) $P+Q+R$ · The council's preliminary key

Q79 TS EAMCET 2021 · 5 Aug · Shift 2 MCQ

The partial fraction decomposition of $\frac{9x-7}{(x+3)(x^2+1)}$ is

(A) $\frac{17}{5(x+3)}-\frac{(17x-6)}{5(x^2+1)}$

(B) $\frac{-17}{5(x+3)}-\frac{(17x-6)}{5(x^2+1)}$

(C) $\frac{17}{5(x+3)}+\frac{(17x-6)}{5(x^2+1)}$

(D) $\frac{-17}{5(x+3)}+\frac{(17x-6)}{5(x^2+1)}$

Answer: (D) $\frac{-17}{5(x+3)}+\frac{(17x-6)}{5(x^2+1)}$ · The council's preliminary key

Q80 TS EAMCET 2021 · 4 Aug · Shift 1 MCQ

For any quadratic polynomial $f(x)$, it is true that $f(x)=f(a)+f'(a)(x-a)+\frac{f''(a)}{2!}(x-a)^2$, where a is any real number.

If $\frac{3x^2+4x+7}{(x-2)^3}=\frac{A}{(x-2)^3}+\frac{B}{(x-2)^2}+\frac{C}{(x-2)}$ and $g(x)=3x^2+4x+7$ then $A+B+C=$

(A) $g(2)+g'(2)+g''(2)$
(B) $g''(2)+2g(2)+\frac{g'(1)}{2!}$
(C) $g(2)+g'(2)+\frac{g''(2)}{2!}$
(D) $2g(2)+2g'(2)+\frac{g''(2)}{2!}$

Answer: (C) $g(2)+g'(2)+\frac{g''(2)}{2!}$ · The council's preliminary key

Q81 TS EAMCET 2021 · 4 Aug · Shift 2 MCQ

If $\frac{9x-7}{(x+3)(x^2+1)}=\frac{A}{x+3}+\frac{Bx+C}{x^2+1}$ where $A,B,C\in\mathbb{R}$, then $A+B+C=$

(A) $\frac{17}{5}$
(B) $\frac{-6}{5}$
(C) $\frac{6}{5}$
(D) $\frac{-17}{5}$

Answer: (B) $\frac{-6}{5}$ · The council's preliminary key

Q82 AP EAMCET 2020 · 23 Sep · Shift 1 MCQ

If $\frac{x^2+5x+7}{(x-3)^3}=\frac{A}{(x-3)}+\frac{B}{(x-3)^2}+\frac{C}{(x-3)^3}$ then $9A-3B+C=$

(A) 2
(B) 5
(C) 7
(D) 9

Answer: (C) 7 · The council's preliminary key

Q83 AP EAMCET 2020 · 22 Sep · Shift 2 MCQ

If $\frac{x+1}{(2x-1)(3x+1)}=\frac{A}{2x-1}+\frac{B}{3x+1}$ then $16A+9B$ is equal to

(A) 4
(B) 5
(C) 6
(D) 8

Answer: (C) 6 · The council's preliminary key

Q84 AP EAMCET 2020 · 21 Sep · Shift 1 MCQ

Reduction of proper fraction $\frac{f(x)}{g(x)}$ into a sum of partial fraction depends up on factorization of _____.

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(A) $f(x)$ alone
(B) $g(x)$ alone
(C) both $f(x)$ and $g(x)$
(D) factors of $f(x)$ and $g(x)$

Answer: (B) $g(x)$ **alone** · The council's preliminary key

Q85 AP EAMCET 2020 · 18 Sep · Shift 1 MCQ

If $\frac{x^2+x+1}{x^2+2x+1} = A + \frac{B}{x+1} + \frac{C}{(x+1)^2}$ then $A - B$ is equal to

(A) $4C$
(B) $4C+1$
(C) $3C$
(D) $2C$

Answer: (D) $2C$ · The council's preliminary key

Q86 AP EAMCET 2020 · 18 Sep · Shift 2 MCQ

The fraction $\frac{x^2}{(x-a)(x-b)}$ is

(A) always a proper partial fraction
(B) always an improper partial fraction
(C) a proper partial fraction for certain values of a, b only
(D) an improper partial fraction for certain values of a, b only

Answer: (B) always an improper partial fraction · The council's preliminary key

Q87 AP EAMCET 2020 · 17 Sep · Shift 1 MCQ

$\frac{x^4}{x^3-3x+2}$ is a _____

(A) Proper fraction
(B) Improper fraction
(C) Mixed fraction
(D) Not a fraction

Answer: (B) Improper fraction · The council's preliminary key

Q88 TS EAMCET 2020 · 14 Sep · Shift 1 MCQ

Let $H(x) = 3x^4 + 6x^3 - 2x^2 + 1$ and $g(x)$ be a polynomial of degree one. If $\frac{H(x)}{(x-1)(x+1)(x-2)} = f(x) + \frac{g(x)}{(x-1)(x+1)(x-2)}$ then $H(-1) + 2H(2) - 3H(1) =$

(A) $f(-1)+2f(2)-3f(1)$
(B) $H(-1)+f(2)+g(3)$
(C) $g(-1)+2g(2)-3g(1)$
(D) $H(1)+2f(2)-g(1)$

Answer: (C) $g(-1)+2g(2)-3g(1)$ · Official TGCHE final key

Q89 TS EAMCET 2020 · 14 Sep · Shift 2 MCQ

If $\frac{x^5-5}{x^3+x^2}=f(x)+\frac{A}{x}+\frac{B}{x^2}+\frac{C}{x+1}$, then the larger value of K for which $f(K)+A+B+C=1$, is

(A) 3
(B) 2
(C) -2
(D) 4

Answer: (A) 3 · Official TGCHE final key

Q90 TS EAMCET 2020 · 11 Sep · Shift 1 MCQ

If $\frac{1}{x^4+x^2+1}=\frac{Ax+B}{x^2+x+1}+\frac{Cx+D}{x^2-x+1}$, then $\text{Cos}^{-1}(A+B+C+D)=$

(A) $\frac{\pi}{2}$
(B) 0
(C) $\frac{\pi}{6}$
(D) $\frac{\pi}{3}$

Answer: (B) 0 · Official TGCHE final key

Q91 TS EAMCET 2020 · 11 Sep · Shift 2 MCQ

If the partial fractions decomposition of $\frac{x^4+24x^2+28}{(x^2+1)^3}$ is $\frac{A}{x^2+1}+\frac{B}{(x^2+1)^2}+\frac{C}{(x^2+1)^3}$ then $B-2A+C=$

(A) 23
(B) 24
(C) 25
(D) 26

Answer: (C) 25 · Official TGCHE final key

Q92 TS EAMCET 2020 · 10 Sep · Shift 1 MCQ

If $\frac{4x^2+5x^4+7}{(x^2+1)(x^4+x^2+1)}=\frac{Ax+B}{x^2+1}+\frac{Cx^3+Dx^2+Ex+F}{x^4+x^2+1}$, then $B+2(D+F+E)-C.A=$

(A) 0
(B) 3
(C) 1
(D) -3

Answer: (A) 0 · Official TGCHE final key

Q93 TS EAMCET 2020 · 10 Sep · Shift 2 MCQ

If $\frac{2x+1}{(x-1)^2(x^2+1)} = \frac{A}{x-1} + \frac{B}{(x-1)^2} + \frac{Cx+D}{x^2+1}$ then $A+B+C+D =$

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

Answer: (D) $\frac{1}{2}$ · Official TGCHE final key

Q94 TS EAMCET 2020 · 9 Sep · Shift 1 MCQ

If the partial fraction decomposition of $\frac{x^2+1}{x^3+3x^2+3x+2}$ is $\frac{A}{x+2} + \frac{B}{x^2+x+1} + \frac{C}{(x+2)(x^2+x+1)}$, then A - B + C =

(A) 0
(B) 2
(C) 3
(D) 4

Answer: (D) 4 · Official TGCHE final key

Q95 TS EAMCET 2020 · 9 Sep · Shift 2 MCQ

For $|x| < \frac{1}{2}$, if the coefficient of x^{10} and the constant term in the expansion of $\frac{2x^3+8x^2-2x-2}{(1-x)(1+x)(1-2x)}$ in powers of x are l and m respectively, then $lm =$

(A) $6(1+2^9)$
(B) $4(1+2^9)$
(C) $6(1+2^{10})$
(D) $4(1+2^{10})$

Answer: (B) $4(1+2^9)$ · Official TGCHE final key

Q96 TS EAMCET 2020 · 9 Sep · Shift 2 MCQ

If $\frac{x^4+3x+1}{(x+1)^2(x-1)} = Ax + B + \frac{C}{x+1} + \frac{D}{(x+1)^2} + \frac{E}{x-1}$ Then $A+B+C+D+E =$

(A) $\frac{3}{2}$

(B) $\frac{9}{2}$

(C) $\frac{5}{2}$

(D) 0

Answer: (C) $\frac{5}{2}$ · Official TGCHE final key

Q97 TS EAMCET 2019 · 6 May · Shift 1 MCQ

If $\frac{3x^4+5x^2+2}{(x^2+1)^2(x^2+2)} = \frac{Ax+B}{x^2+2} + \frac{Cx+D}{x^2+1} + \frac{Ex+F}{(x^2+1)^2}$, then $A+2B+D+4E =$

(A) 5

(B) 0

(C) 1

(D) 7

Answer: (D) 7 · Official TGCHE final key

Q98 TS EAMCET 2019 · 4 May · Shift 1 MCQ

If $\frac{27x^2+32x+16}{(3x+2)^2(1-x)} = \frac{A}{3x+2} + \frac{B}{(3x+2)^2} + \frac{C}{1-x}$, then $AB+BC+CA =$

(A) 6

(B) 12

(C) 24

(D) 48

Answer: (B) 12 · Official TGCHE final key

Q99 TS EAMCET 2019 · 3 May · Shift 1 MCQ

Let $\frac{1}{(x^2-3)^2} = \frac{A_1}{x-\sqrt{3}} + \frac{A_2}{(x-\sqrt{3})^2} + \frac{A_3}{x+\sqrt{3}} + \frac{A_4}{(x+\sqrt{3})^2}$. Then consider the following statements :

i) All the A_i's are not distinct

ii) There exists a pair, A_p and A_q such that $A_p^2 = A_q^2$ $(p \neq q)$

iii) $\sum_{i=1}^{4} A_i = \frac{1}{6}$

iv) $\sum_{i=1}^{4} A_i = 1$

Which one of the following is true?

(A) Only statement (iii) is false
(B) Both the statements (ii) and (iv) are false
(C) Only statement (iv) is false
(D) Both the statements (i) and (iii) are false

Answer: (C) Only statement (iv) is false · Official TGCHE final key

Q100 TS EAMCET 2019 · 3 May · Shift 2 MCQ

If $\frac{2x+7}{(x^2+4)(x^2+9)(x^2+16)} = \frac{Ax+l}{x^2+4} + \frac{Bx+m}{x^2+9} + \frac{Cx+n}{x^2+16}$, then $\frac{1}{A} + \frac{1}{B} + \frac{1}{C} =$

(A) 0
(B) 27
(C) $\frac{105}{2}$
(D) $\frac{109}{2}$

Answer: (D) $\frac{109}{2}$ · Official TGCHE final key

Q101 AP EAMCET 2019 · 22 Apr · Shift 1 MCQ

If $\frac{8}{(x+3)^2(x-2)} = \frac{Ax+B}{(x+3)^2} + \frac{C}{x-2}$ then $25(B+8C-A) =$

(A) 25
(B) 1
(C) 8
(D) -8

Answer: (C) 8 · Official APSCHE final key

Q102 AP EAMCET 2019 · 22 Apr · Shift 2 MCQ

The coefficient of x^3 in the expansion of $\frac{x}{(x+1)(x-2)^2}$ is

(A) $\frac{9}{48}$
(B) $\frac{15}{48}$
(C) $\frac{77}{324}$
(D) $\frac{15}{16}$

Answer: (A) $\frac{9}{48}$ · Official APSCHE final key

Q103 AP EAMCET 2019 · 21 Apr · Shift 1 MCQ

If $\frac{x^4}{(x-1)(x-2)(x-3)} = x + k + \frac{A}{x-1} + \frac{B}{x-2} + \frac{C}{x-3}$, then $k + A - B + C =$

(A) 104

(B) 52

(C) 63

(D) $\frac{127}{2}$

Answer: (C) 63 · Official APSCHE final key

Q104 AP EAMCET 2019 · 21 Apr · Shift 2 MCQ

When $|x| < \frac{1}{2}$, the coefficient of x^4 in the expansion of $\frac{3x^2 - 5x + 3}{(x-1)(2x+1)(x+3)}$ is

(A) $\frac{722}{27}$

(B) $\frac{724}{27}$

(C) $\frac{-722}{27}$

(D) $\frac{-724}{27}$

Answer: (C) $\frac{-722}{27}$ · Official APSCHE final key

Q105 AP EAMCET 2019 · 20 Apr · Shift 1 MCQ

If $\frac{3}{(x-1)(x^2+x+1)} = \frac{1}{x-1} - \frac{x+2}{x^2+x+1} = f_1(x) - f_2(x)$ and $\frac{x+1}{(x-1)^2(x^2+x+1)} = Af_1(x) + \left(B + \frac{D}{x-1}\right) f_2(x) + \frac{C}{(x-1)^2}$, then $A + B + C + D =$

(A) 1

(B) $\frac{-1}{3}$

(C) 0

(D) $\frac{1}{3}$

Answer: (C) 0 · Official APSCHE final key

Q106 AP EAMCET 2019 · 20 Apr · Shift 2 MCQ

If $\frac{x^4}{(x-a)(x-b)(x-c)} = P(x) + \frac{A}{x-a} + \frac{B}{x-b} + \frac{C}{x-c}$, then $P(0) + A(a-b)(a-c) =$

(A) $a^4 + b^4 + c^4 + a$

(B) $a + b + c$

(C) $a^4 - a - b - c$

(D) $a + b + c + a^4$

Answer: (D) $a + b + c + a^4$ · Official APSCHE final key

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Q107 TS EAMCET 2018 · 7 May · Shift 1 MCQ

If $\frac{3x-2}{(x+1)^2(x+3)} = \frac{A}{x+1} + \frac{B}{(x+1)^2} + \frac{C}{x+3}$, then $A+B+C =$

(A) $\frac{11}{4}$

(B) $\frac{5}{2}$

(C) $-\frac{5}{2}$

(D) $-\frac{11}{4}$

Answer: (C) $-\frac{5}{2}$ · The council's preliminary key

Q108 TS EAMCET 2018 · 5 May · Shift 1 MCQ

If F_1 and F_2 are irreducible factors of x^4+x^2+1 with real coefficients and $\frac{x^3-2x^2+3x-4}{x^4+x^2+1} = \frac{Ax+B}{F_1} + \frac{Cx+D}{F_2}$ then $A+B+C+D =$

(A) -2

(B) 1

(C) -3

(D) -4

Answer: (C) -3 · The council's preliminary key

Q109 TS EAMCET 2018 · 4 May · Shift 1 MCQ

If $\frac{x^4+x^3+2x^2-2x+1}{x^3+x^2} = P(x) + \frac{A}{x} + \frac{B}{x^2} + \frac{C}{x+1}$ then $A+B+C =$

(A) $P(0)$

(B) $P(2)$

(C) $P(3)$

(D) $P(4)$

Answer: (C) $P(3)$ · The council's preliminary key

Q110 TS EAMCET 2018 · 4 May · Shift 2 MCQ

If $\frac{3x+2}{(x+1)(2x^2+3)} = \frac{A}{x+1} + \frac{Bx+C}{2x^2+3}$ then $A-B+C =$

(A) 1

(B) 2

(C) 3

(D) 5

Answer: (B) 2 · The council's preliminary key

Q111 AP EAMCET 2018 · 24 Apr · Shift 2 MCQ

If $\frac{x^4}{(x-1)^2(x+1)} = Ax + B + \frac{P}{(x-1)} + \frac{Q}{(x-1)^2} + \frac{R}{x+1}$, then $2AP - BQ + R =$

(A) 3

(B) $\frac{13}{4}$

(C) $-\frac{11}{4}$

(D) $-\frac{7}{2}$

Answer: (B) $\frac{13}{4}$ · The council's preliminary key

Q112 AP EAMCET 2018 · 23 Apr · Shift 1 MCQ

If $\frac{x^3}{(2x-1)(x-1)^2} = A + \frac{B}{2x-1} + \frac{C}{x-1} + \frac{D}{(x-1)^2}$, then $2A - 3B + 4C + 5D =$

(A) $\frac{21}{2}$

(B) $\frac{23}{2}$

(C) $\frac{17}{2}$

(D) $\frac{19}{2}$

Answer: (C) $\frac{17}{2}$ · The council's preliminary key

Q113 AP EAMCET 2018 · 23 Apr · Shift 2 MCQ

If $\frac{x^4+24x^2+28}{(x^2+1)^3} = \frac{A}{(x^2+1)} + \frac{B}{(x^2+1)^2} + \frac{C}{(x^2+1)^3}$ then $A + C =$

(A) 12

(B) 10

(C) 9

(D) 6

Answer: (D) 6 · The council's preliminary key

Q114 AP EAMCET 2018 · 22 Apr · Shift 1 MCQ

If $\frac{x^2+5x+7}{(x-3)^3} = \frac{A}{(x-3)} + \frac{B}{(x-3)^2} + \frac{C}{(x-3)^3}$, then the equation of the line having slope A and passing through the point (B, C) is

(A) $x + y - 20 = 0$

(B) $x - y + 20 = 0$

(C) $x + y + 20 = 0$

(D) $x - y - 20 = 0$

Answer: (B) $x - y + 20 = 0$ · The council's preliminary key

Q115 AP EAMCET 2018 · 22 Apr · Shift 2 MCQ

If $\frac{3x^2+1}{(x^2+1)(x^2+2)^2} = \frac{Ax+B}{x^2+1} + \frac{Cx+D}{x^2+2} + \frac{Ex+F}{(x^2+2)^2}$, then $A + C + E =$

(A) 0
(B) $\frac{7}{3}$
(C) 1
(D) $\frac{4}{3}$

Answer: (A) 0 · The council's preliminary key

Q116 TS EAMCET 2017 · 12 May · Offline MCQ

If $\frac{x^2+5}{(x^2+1)(x-2)} = \frac{A}{x-2} + \frac{Bx+C}{x^2+1}$, then $A+B+C =$

(A) -1
(B) $\frac{2}{5}$
(C) $\frac{-3}{5}$
(D) 0

Answer: (C) $\frac{-3}{5}$ · The council's preliminary key

Q117 AP EAMCET 2017 · 26 Apr · Shift 1 MCQ

If $\frac{5x^2+2}{x^3+x} = \frac{A_1}{x} + \frac{A_2x+A_3}{x^2+1}$, then $(A_1, A_2, A_3) =$

(A) $(0, 2, 3)$
(B) $(2, 0, 3)$
(C) $(3, 0, 2)$
(D) $(2, 3, 0)$

Answer: (D) $(2, 3, 0)$ · The council's preliminary key

Q118 AP EAMCET 2017 · 26 Apr · Shift 2 MCQ

If $\frac{x^2-3x+1}{(x-1)(x-2)(x-3)} = \frac{A}{x-3} + \frac{B}{(x-1)(x-2)} + \frac{C}{(x-1)(x-2)(x-3)}$ then $B =$

(A) 0
(B) 1
(C) -1
(D) 0

Options (1) or (4) were accepted. More than one answer was accepted. · The council's preliminary key

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Q119 AP EAMCET 2017 · 25 Apr · Shift 1 MCQ

If $\frac{x^2+5x+1}{(x+1)(x+2)(x+3)} = \frac{a}{x+1} + \frac{b}{(x+1)(x+2)} + \frac{c}{(x+1)(x+2)(x+3)}$ then the inverse of the matrix $\begin{bmatrix} a & b \\ c & 1 \end{bmatrix}$ is

(A) $\begin{bmatrix} 1 & 0 \\ -5 & 1 \end{bmatrix}$

(B) $\begin{bmatrix} -1 & 0 \\ 5 & -1 \end{bmatrix}$

(C) $\begin{bmatrix} 1 & 0 \\ 5 & 1 \end{bmatrix}$

(D) $\begin{bmatrix} 1 & 0 \\ 1 & 5 \end{bmatrix}$

Answer: (C) $\begin{bmatrix} 1 & 0 \\ 5 & 1 \end{bmatrix}$ · The council's preliminary key

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Q120 AP EAMCET 2017 · 25 Apr · Shift 2 MCQ

The values of x for which $\frac{x}{(x-1)^2(x-2)}$ has an expansion and the coefficient of x^n in such expansion are respectively

(A) $|x| < 1,\ 1 - n - \frac{1}{2^n}$

(B) $|x| < 2,\ 1 - n - \frac{1}{2^n}$

(C) $|x| < 1,\ 0$

(D) $x \in \mathbb{R},\ 1 - n - \frac{1}{2^n}$

Answer: (A) $|x| < 1,\ 1 - n - \frac{1}{2^n}$ · The council's preliminary key

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Q121 AP EAMCET 2017 · 24 Apr · Shift 1 MCQ

If $\frac{x^3+x^2+1}{(x^2+2)(x^2+3)} = \frac{Ax+B}{x^2+2} + \frac{Cx+D}{x^2+3}$, then $A + B + C + D =$

(A) 1

(B) 4

(C) 3

(D) 2

Answer: (D) 2 · The council's preliminary key

Q122 AP EAMCET 2017 · 24 Apr · Shift 2 MCQ

If $\frac{x^4}{(x-1)(x-2)(x-3)} = Ax + B \cdot \frac{1}{(x-1)} + C \cdot \frac{1}{(x-2)} + D \cdot \frac{1}{(x-3)} + E$, then $A + B + C + D + E =$

(A) -12

(B) 6

(C) 18

(D) 32

Answer: (D) 32 · The council's preliminary key

Q123 TS EAMCET 2016 · 15 May · Offline MCQ

$\frac{x+1}{x^4(x+2)} = \frac{A}{x} + \frac{B}{x^2} + \frac{C}{x^3} + \frac{D}{x^4} + \frac{E}{x+2} \Rightarrow B + D + E =$

(A) $A + C$

(B) $A - C$

(C) $2A + C$

(D) $2A + 2C$

Answer: (A) $A + C$ · Official TGCHE final key

Q124 AP EAMCET 2014 · 22 May · Offline MCQ

$\frac{2x^3+x^2-5}{x^4-25} = \frac{Ax+B}{x^2-5} + \frac{Cx+1}{x^2+5} \Rightarrow (A, B, C) =$

(A) $(1, 1, 1)$

(B) $(1, 1, 0)$

(C) $(1, 0, 1)$

(D) $(1, 2, 1)$

Answer: (C) $(1, 0, 1)$ · The council's preliminary key

Q125 AP EAMCET 2013 · 10 May · Offline MCQ

If $\frac{1}{x^4 + x^2 + 1} = \frac{Ax + B}{x^2 + x + 1} + \frac{Cx + D}{x^2 - x + 1}$, then $C + D =$

(A) -1

(B) 1

(C) 2

(D) 0

Answer: (D) 0 · The council's preliminary key

Q126 AP EAMCET 2012 · 12 May · Offline MCQ

$\frac{1}{x(x+1)(x+2)\ldots(x+n)} = \frac{A_0}{x} + \frac{A_1}{x+1} + \frac{A_2}{x+2} + \cdots + \frac{A_n}{x+n},\ 0 \le r \le n \Rightarrow A_r =$

(A) $(-1)^r \frac{r!}{(n-r)!}$

(B) $(-1)^r \frac{1}{r!(n-r)!}$

(C) $\frac{1}{r!(n-r)!}$

(D) $\frac{r!}{(n-r)!}$

Answer: (B) $(-1)^r \frac{1}{r!(n-r)!}$ · Official APSCHE final key

Q127 AP EAMCET 2011 · 8 May · Offline MCQ

$\frac{x^2 + x + 1}{(x-1)(x-2)(x-3)} = \frac{A}{x-1} + \frac{B}{x-2} + \frac{C}{x-3} \Rightarrow A + C =$

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(A) 4

(B) 5

(C) 6

(D) 8

Answer: (D) 8 · The council's preliminary key

Q128 AP EAMCET 2010 · 30 May · Offline MCQ

$$\frac{3x^2+x+1}{(x-1)^4}=\frac{a}{(x-1)}+\frac{b}{(x-1)^2}+\frac{c}{(x-1)^3}+\frac{d}{(x-1)^4}\Rightarrow\begin{bmatrix}a & b\\ c & d\end{bmatrix}=$$

(A) $\begin{bmatrix}3 & 7\\ 5 & 0\end{bmatrix}$

(B) $\begin{bmatrix}0 & 3\\ 7 & 5\end{bmatrix}$

(C) $\begin{bmatrix}0 & 7\\ 3 & 5\end{bmatrix}$

(D) $\begin{bmatrix}3 & 5\\ 7 & 0\end{bmatrix}$

Answer: (B) $\begin{bmatrix}0 & 3\\ 7 & 5\end{bmatrix}$ · Official APSCHE final key

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