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MATHEMATICS · EAPCET (EAMCET)

Permutations & Combinations

Previous Year Questions with answers

395 questions · **149** papers · **2010–2026** · newest paper first

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What is in this PDF: every Permutations & Combinations 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.

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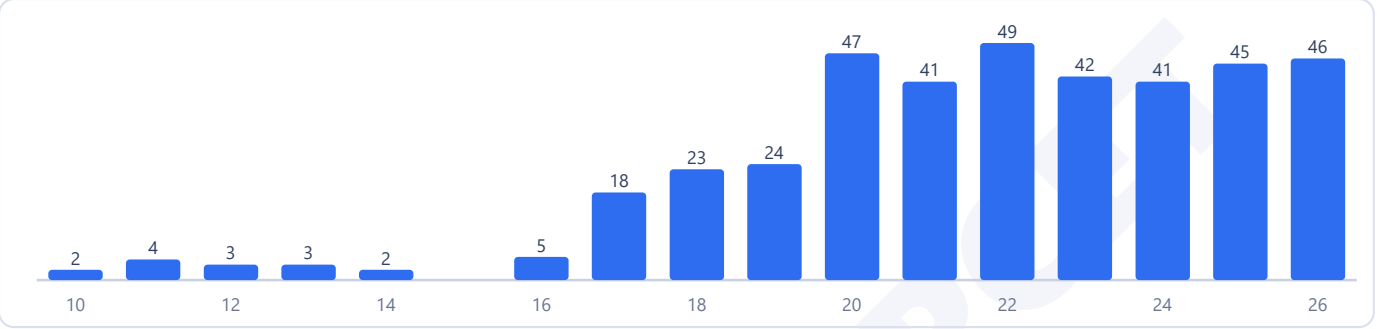
Chapter at a glance

3.6%	395	77 of 77	395 / 0
of Mathematics questions, 2022–2026	questions, 2010–2026	papers asked it, 2022–2026	MCQ / numerical, 2010–2026

Trend. Steady: 2.9 questions per paper in 2024–2026 against 2.9 in 2022–2023.

Questions per year



Counts are the questions we hold: 395 in 149 papers. 16 questions in this chapter came back in more than one paper.

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

Counting Principles	123
Combinations	116
Permutations	114
Distributions & Advanced Counting	42

How often it comes up

Permutations & Combinations serves as an essential combinatorial engine with sustained presence across every single examination sitting. Across the historical expanse from 2010 through 2026, the chapter delivered 395 questions across 149 evaluated exam papers, featuring in all 149 sittings to average 2.7 questions per paper and a 3.3 percent subject share. In modern testing cycles from 2022 to 2026, Permutations & Combinations preserved this complete appearance in every paper, supplying 223 questions across 77 sittings (recording an average of 2.9 questions per paper and a 3.6 percent subject share). This sustained density positions the chapter at rank 13 of 29 mathematics chapters.

Every paper in the recent testing window includes between two and three combinatorial problems. Across the three most recent testing years from 2024 to 2026, candidates solved 132 questions across 46 sittings (present in all 46 papers, averaging 2.9 per test and a 3.6 percent share). In the previous examination epoch from 2010 to 2021, examiners set 172 questions across 72 sittings (appearing in all 72 papers, 2.4 per test, 3.0 percent share). Evaluating temporal trends, comparing early testing with the last three years shows the share is up, whereas comparing recent testing with the last three years shows the share is about the same. Across the two regional boards between 2022 and 2026, Andhra Pradesh contributed 141 questions across 48 papers (all 48 papers, 2.9 per test, 3.7 percent share), while Telangana contributed 82 questions across 29 papers (all 29 papers, 2.8 per test, 3.5 percent share).

Most-asked topics

Combinatorial problems distribute across four well-defined counting themes:

- **Permutations**: Supplying 114 total questions, with 66 emerging in modern sessions (tested through 2026). Key concepts include linear arrangements with identical items, dictionary word rank, restricted arrangements with together or not-together conditions, circular permutations, and necklace symmetry.

- **Combinations**: Delivering 116 total questions, with 65 in recent examinations (tested through 2026). Core skills span committee formation with minimum or maximum quotas, geometric combinations (counting diagonals, triangles, intersections of coplanar lines), and properties of combinations.
- **Counting Principles**: Totaling 123 questions historically, with 63 appearing in recent papers (last tested in 2026). Focus areas involve fundamental product and addition rules, digit formation under divisibility or magnitude bounds, and factorial simplification.
- **Distributions & Advanced Counting**: Registering 42 total questions, with 29 set in recent years (last asked in 2026). Problems address integer solutions of linear equations using stars and bars, distribution of identical or distinct objects into distinct boxes, derangements, and principle of inclusion-exclusion.

What the questions look like

Examiners emphasize multi-case counting, restricted arrangements, and dictionary ranking.

A ubiquitous problem type asks for the dictionary rank of a word containing repeated letters, requiring candidates to sum the counts of words preceding it alphabetically by dividing factorials by repeated letter frequencies. Another common format involves forming multi-digit numbers from a given set of digits that satisfy combined constraints, such as being greater than a specific threshold while also being divisible by four or five. Questions on combinations routinely pose committee selection scenarios across distinct categories with upper and lower participation limits, requiring candidates to evaluate and sum disjoint cases.

How to practise it

Master the two fundamental arrangement techniques: the tie method and the gap method. When specific items must always stay together, tie them into a single super-element, arrange the resulting group, and multiply by internal permutations of the tied elements. When specific items must never sit adjacent to one another, arrange the unrestricted items first and place the restricted items into the available gaps.

For dictionary ranking of words with repeated letters, arrange the distinct letters alphabetically. For each letter position, count how many words start with an alphabetically earlier available letter, dividing by the factorials of all remaining repeating letters. Practice finding non-negative integer solutions to x one plus x two plus ... plus x r equals n using the stars and bars formula: n plus r minus one choose r minus one. If variables carry minimum requirements, shift each variable by its lower bound to reduce the problem to standard non-negative integer form.

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Q1 AP EAPCET 2026 · 18 May · Shift 1 MCQ

All possible 3 digit numbers are formed using all the digits $2, 3, 5, 7, 9$ without using any digit more than once. Among these 3 digit numbers, the number of numbers which are divisible by 3 but not divisible by 5 is

(A) 24
(B) 22
(C) 20
(D) 18

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

Q2 AP EAPCET 2026 · 18 May · Shift 1 MCQ

There are 15 identical balls for sale among which 4 are red, 5 are black and 6 are white. If a person buys at least one ball out of these 15 balls, then the total number of ways in which that person can buy the balls is

(A) 120
(B) 119
(C) 210
(D) 209

Answer: (D) 209 · The council's preliminary key

Q3 AP EAPCET 2026 · 18 May · Shift 1 MCQ

There are 10 cards numbered 1 to 10. The number of ways in which at least 3 cards can be chosen from these 10 cards is

(A) 1023
(B) 1013
(C) 1024
(D) 968

Answer: (D) 968 · The council's preliminary key

Q4 AP EAPCET 2026 · 18 May · Shift 2 MCQ

A student has to answer 10 out of 13 questions in an examination choosing atleast 3 from the 5 particular questions. The number of choices available to the student is

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(A) 196
(B) 276
(C) 326
(D) 156

Answer: (B) 276 · The council's preliminary key

Q5 AP EAPCET 2026 · 18 May · Shift 2 MCQ

If a and b are the greatest values of ${}^{2n}C_r$ and ${}^{(2n-1)}C_r$ respectively, then

(A) $a = 2b$
(B) $b = 2a$
(C) $a = b$
(D) $a^2 = 2b^2$

Answer: (A) $a = 2b$ · The council's preliminary key

Q6 AP EAPCET 2026 · 18 May · Shift 2 MCQ

If all the letters of the word MESSI are permuted in all possible ways and the words [with or without meaning] thus formed are arranged in dictionary order, then the rank of the word MESSI is

(A) 18
(B) 27
(C) 23
(D) 26

Answer: (B) 27 · The council's preliminary key

Q7 AP EAPCET 2026 · 15 May · Shift 1 MCQ

All the solutions (n, r) of the equation $\frac{{}^{n}C_r}{{}^{(n+1)}C_r} = \frac{1}{3}$ can be obtained from one of the following equations given in the options for k = 1, 2, 3, ...
Choose the correct option.

(A) $\frac{{}^{(3k)}C_{2k}}{{}^{(3k+1)}C_{2k}} = \frac{1}{3}$
(B) $\frac{{}^{(3k-1)}C_{2k}}{{}^{(3k)}C_{2k}} = \frac{1}{3}$
(C) $\frac{{}^{(4k)}C_{2k}}{{}^{(4k+1)}C_{2k}} = \frac{1}{3}$
(D) $\frac{{}^{(4k-1)}C_{2k}}{{}^{(4k)}C_{2k}} = \frac{1}{3}$

Answer: (B) $\frac{{}^{(3k-1)}C_{2k}}{{}^{(3k)}C_{2k}} = \frac{1}{3}$ · The council's preliminary key

Q8 AP EAPCET 2026 · 15 May · Shift 2 MCQ

If ${}^{n}P_4 = 5040$ and ${}^{15}P_r = 2730$, then ${}^{n}P_r =$

(A) 120
(B) 720
(C) 1680
(D) 840

Answer: (B) 720 · The council's preliminary key

Q9 AP EAPCET 2026 · 15 May · Shift 2 MCQ

If all the letters of the word SEARCH are permuted in all possible ways, then among the permutations given formed, the number of permutations in which no letter of the word occupies its original position is

(A) 30
(B) 120
(C) 265
(D) 360

Answer: (C) 265 · The council's preliminary key

Q10 AP EAPCET 2026 · 15 May · Shift 2 MCQ

The number of ways of selecting a team of 7 persons for a hotel having atleast one receptionist from 4 persons, atleast 4 waiters from another 7 persons and atleast 1 cook from another 5 persons is

(A) 1470
(B) 2450
(C) 2720
(D) 2870

Answer: (D) 2870 · The council's preliminary key

Q11 AP EAPCET 2026 · 14 May · Shift 1 MCQ

Let P and Q are two sets such that $n(P) = 27$, $n(Q) = 17$, $n(P \cap Q) = 5$. If x is the number of ways of selecting 7 elements from P such that all the elements of $P \cap Q$ are in each selection and y is the number of ways of selecting 10 elements from Q such that no element of $P \cap Q$ is present in any selection, then $x + y + 1 =$

(A) 231
(B) 248
(C) 297
(D) 298

Answer: (D) 298 · The council's preliminary key

Q12 AP EAPCET 2026 · 14 May · Shift 1 MCQ

In each of its move, a pawn in a chess board can move one step either horizontally or vertically to its adjacent cell from its current position.
If a pawn is initially located at the South-West corner cell of the chess board, then the number of ways it can reach the North-East corner cell of the chess board with minimum number of moves, is

(A) $^{64}C_2$
(B) $2 \times {}^{8}C_2$
(C) $^{14}C_7$
(D) $^{16}C_8$

Answer: (C) $^{14}C_7$ · The council's preliminary key

Q13 AP EAPCET 2026 · 14 May · Shift 1 MCQ

All the letters of the word REMAIN are permuted in all possible ways and the words (with or without meaning) thus formed are arranged in the order as in the dictionary. The rank of the word REMAIN, when counted from the rank of the word MARINE beginning with the word MARINE itself, is

(A) 266
(B) 256
(C) 272
(D) 245

Answer: (B) 256 · The council's preliminary key

Q14 AP EAPCET 2026 · 14 May · Shift 2 MCQ

All possible 3 digit numbers are formed using the digits $0, 2, 3, 5, 7, 9$ without repeating any digit. Then the number of numbers among them which are divisible by 15 is

(A) 11
(B) 14
(C) 16
(D) 36

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

Q15 AP EAPCET 2026 · 14 May · Shift 2 MCQ

A pack of playing cards has only 50 cards instead of 52 cards. If 3 cards are drawn at a time from that pack of cards, then the number of ways of getting 2 kings and a queen is

(A) 36
(B) 25
(C) 62
(D) 79

Answer: (D) 79 · The council's preliminary key

Q16 AP EAPCET 2026 · 14 May · Shift 2 MCQ

A committee of 8 members is to be formed from 5 teaching staff, 4 office staff and 6 students so as to include atleast two from each category. Then the total number of ways of forming the committee is

(A) 4100
(B) 3950
(C) 3200
(D) 3500

Answer: (A) 4100 · The council's preliminary key

Q17 AP EAPCET 2026 · 13 May · Shift 1 MCQ

A student is allowed to select atmost 'n' books from a collection of $2n+1$ books. If the total number of ways in which he can select atleast one book is 255, then the value of 'n' is

(A) 6
(B) 5
(C) 4
(D) 3

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

Q18 AP EAPCET 2026 · 13 May · Shift 1 MCQ

The number of different nine digit numbers that can be formed by rearranging all the digits of the number 223355888 so that odd digits always occupy even positions is

(A) 180
(B) 120
(C) 60
(D) 36

Answer: (C) 60 · The council's preliminary key

Q19 AP EAPCET 2026 · 13 May · Shift 1 MCQ

If all the letters of the word RANKS are permutated in all possible ways and the words (with or without meaning) thus formed are arranged in dictionary order then the rank of the word RANKS is

(A) 74
(B) 76
(C) 75
(D) 77

Answer: (C) 75 · The council's preliminary key

Q20 AP EAPCET 2026 · 13 May · Shift 2 MCQ

If 3 dice are thrown at a time, then the number of ways of getting 11 as the sum of the numbers appearing on their faces is

(A) 25
(B) 27
(C) 21
(D) 15

Answer: (B) 27 · The council's preliminary key

Q21 AP EAPCET 2026 · 13 May · Shift 2 MCQ

The exponent of 6 in $72!$ is

(A) 14
(B) 16
(C) 34
(D) 70

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

Q22 AP EAPCET 2026 · 12 May · Shift 1 MCQ

Let A be a set of $n(\geq 3)$ distinct elements. For $x, y, z \in A$, if A^3 is the set of all ordered triplets (x, y, z), then the number of triplets of A^3 in which at least two among x, y, z are equal is

(A) nP_3
(B) $n^2 - nP_3$
(C) $3n^2 - 2n$
(D) $3n^2(n-1)$

Answer: (C) $3n^2 - 2n$ · The council's preliminary key

Q23 AP EAPCET 2026 · 12 May · Shift 1 MCQ

If n is an integer between 0 and 31, then the minimum value of $n!\,(31-n)!$ is

(A) $10!\,21!$
(B) $15!\,16!$
(C) $30!$
(D) $31!$

Answer: (B) $15!\,16!$ · The council's preliminary key

Q24 AP EAPCET 2026 · 12 May · Shift 1 MCQ

The number of ways of arranging 10 men and 5 women around a circular table such that no two women sit together is

(A) $10!$
(B) $5!$
(C) $10!\,5!$
(D) $9!\,{}^{10}P_5$

Answer: (D) $9!\,{}^{10}P_5$ · The council's preliminary key

Q25 AP EAPCET 2026 · 12 May · Shift 2 MCQ

If all possible 6 digit numbers are formed by using all the digits 1, 3, 5, 6, 7, 9 without repeating any digit, then the number of numbers which are greater than 3,00,000 and divisible by 4 is

(A) $5 \times 4!$
(B) $5! \times 4!$
(C) $13 \times 3!$
(D) $4 \times 4!$

Answer: (D) $4 \times 4!$ · Checked by our team

Q26 AP EAPCET 2026 · 12 May · Shift 2 MCQ

Among the number of all possible arrangements of all the letters of the word 'ARRANGE', the number of arrangements in which either two A's or two R's do not occur together is

(A) 460
(B) 520
(C) 580
(D) 660

Answer: (D) 660 · The council's preliminary key

Q27 AP EAPCET 2026 · 12 May · Shift 2 MCQ

A candidate is required to answer seven out of 12 questions which are divided into two parts, each containing 6 questions. If he is not permitted to answer more than 5 questions from each part, the different number of ways he can choose the 7 questions is

(A) 820
(B) 780
(C) 720
(D) 640

Answer: (B) 780 · The council's preliminary key

Q28 AP EAPCET 2026 · 12 May · Shift 2 MCQ

The number of times the digit 5 occurs in all the numbers from 1 to 1000 is

(A) 243
(B) 297
(C) 300
(D) 305

Answer: (C) 300 · The council's preliminary key

Q29 TS EAPCET 2026 · 11 May · Shift 1 MCQ

If all possible 5-digit numbers are formed using the digits 3, 4, 5, 6, 7, 8, 9 when repetition is allowed, then the number of numbers among these 5-digit numbers which are divisible by 7 is

(A) 2520
(B) 840
(C) 2401
(D) 1680

Answer: (C) 2401 · The council's preliminary key

Q30 TS EAPCET 2026 · 11 May · Shift 1 MCQ

A committee of 5 members from 5 Indians, 4 Americans and 3 Australians is to be formed so that every country has its representative in the committee. Then, the number of ways of forming the committee having at most two representatives from each country is

(A) 560
(B) 195
(C) 200
(D) 390

Answer: (D) 390 · The council's preliminary key

Q31 TS EAPCET 2026 · 11 May · Shift 1 MCQ

Let p be the number of ways of arranging 6 students such that 3 are around a circular table and the remaining 3 in a row. Let q be the number of ways of arranging 5 boys and 4 girls in a row such that no two boys and no two girls are together. Then $\frac{q}{p} =$

(A) 12
(B) 18
(C) 6
(D) 8

Answer: (A) 12 · The council's preliminary key

Q32 TS EAPCET 2026 · 11 May · Shift 2 MCQ

The number of odd factors of 24! is

(A) 23450
(B) 23
(C) 10560
(D) 76954

Answer: (C) 10560 · The council's preliminary key

Q33 TS EAPCET 2026 · 11 May · Shift 2 MCQ

The number of numbers between 345 and 543 such that the sum of the digits in each number is 15 is

(A) 24
(B) 136
(C) 91
(D) 17

Answer: (D) 17 · The council's preliminary key

Q34 TS EAPCET 2026 · 11 May · Shift 2 MCQ

If 3×3 matrices are formed by using $0, \pm 1, \pm 2$ as their elements, then the number of matrices whose trace is 0 is

(A) $5^6(19)$
(B) $5^9(16)$
(C) $5^6(15)$
(D) $5^8(14)$

Answer: (A) $5^6(19)$ · The council's preliminary key

Q35 TS EAPCET 2026 · 10 May · Shift 1 MCQ

By using all the letters of the word 'LETTER', all possible 6-letter words (with or without meaning) are formed. If all these words are arranged in dictionary order, then the rank of the word 'TRELET' is

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(A) 159
(B) 147
(C) 135
(D) 157

Answer: (A) 159 · The council's preliminary key

Q36 TS EAPCET 2026 · 10 May · Shift 1 MCQ

If all the letters of the word 'ASSOCIATION' are permuted in all possible ways to form all 11-letter words (with or without meaning), then among these words, the number of words in which the identical letters are always together but no two such groups of identical letters are together is

(A) 1440
(B) 2304
(C) 576
(D) 144

Answer: (D) 144 · The council's preliminary key

Q37 TS EAPCET 2026 · 10 May · Shift 1 MCQ

The number of ways of distributing 5 identical things to 4 persons so that any person may get at most 5 things is

(A) 84
(B) 56
(C) 14
(D) 126

Answer: (B) 56 · The council's preliminary key

Q38 TS EAPCET 2026 · 10 May · Shift 2 MCQ

The number of 3-digit numbers that can be formed by using the digits 2, 3, 5, 7, 9 that are divisible by 3, if repetition of digits is not allowed, is

(A) 30
(B) 12
(C) 18
(D) 24

Answer: (D) 24 · The council's preliminary key

Q39 TS EAPCET 2026 · 10 May · Shift 2 MCQ

A question paper contains 3 parts A, B and C. There are 5 questions in A, 4 questions in B and 3 questions in C. Atleast 3 questions from A, atleast 2 questions from B and atleast 1 question from C

must be attempted. If a student has attempted 7 questions with these conditions, then the total number of ways in which he can attempt the questions is

(A) 330
(B) 402
(C) 390
(D) 430

Answer: (C) 390 · The council's preliminary key

Q40 TS EAPCET 2026 · 10 May · Shift 2 MCQ

There are 3 different jobs in an office. 3 women and 5 men have attended before the selection committee. If each of them is eligible for all the 3 jobs and atleast one woman has to be selected, then the number of ways of allotting these 3 jobs to three selected persons is

(A) 46
(B) 276
(C) 138
(D) 74

Answer: (B) 276 · The council's preliminary key

Q41 TS EAPCET 2026 · 9 May · Shift 1 MCQ

The number of integral solutions of the equation $x+y+z=13$ such that $1 \leq x \leq 9, 0 \leq y \leq 9, 0 \leq z \leq 9$ is

(A) 105
(B) 66
(C) 69
(D) 83

Answer: (C) 69 · The council's preliminary key

Q42 TS EAPCET 2026 · 9 May · Shift 1 MCQ

If $\frac{{}^{(n-1)}\mathrm{C}_{r-1}}{{}^{n}\mathrm{C}_{r}}=\frac{3}{5}$; $\frac{{}^{(n+1)}\mathrm{C}_{r+1}}{{}^{n}\mathrm{C}_{r}}=\frac{11}{7}$, then ${}^{n}\mathrm{C}_{r+3} \div {}^{r}\mathrm{C}_{n/2} =$

(A) $\frac{3}{5}$
(B) 12
(C) 8
(D) $\frac{5}{3}$

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

Q43 TS EAPCET 2026 · 9 May · Shift 1 MCQ

There are 7 men and 5 women in a park. The number of ways of arranging them around a circular path such that 4 particular persons which include 2 particular men and 2 particular women never stand together is

(A) $11879(8!)$
(B) $966(8!)$
(C) $986(8!)$
(D) $494(4!)(8!)$

Answer: (B) $966(8!)$ · The council's preliminary key

Q44 TS EAPCET 2026 · 9 May · Shift 2 MCQ

The rank of the word 'NEEDED', when all the letters of this word are permuted in all possible ways to form different 6 letter words (with or without meaning) and then arranged in dictionary order, is

(A) 45
(B) 59
(C) 38
(D) 27

Answer: (B) 59 · The council's preliminary key

Q45 TS EAPCET 2026 · 9 May · Shift 2 MCQ

If the number of circular permutations of 10 distinct things taken 5 at a time is m and the number of linear permutations of 9 distinct things taken 4 at a time is n, then $m : n =$

(A) $1 : 2$
(B) $2 : 1$
(C) $2 : 3$
(D) $3 : 2$

Answer: (B) $2 : 1$ · The council's preliminary key

Q46 TS EAPCET 2026 · 9 May · Shift 2 MCQ

A student has gone to a book fair and found 6 different mathematics books, 5 different physics books, 4 different chemistry books meant for TGEAPCET examination. If he likes to buy at least one book of each subject, then the total number of ways in which he can buy the books is

(A) 29295
(B) 32768
(C) 4210
(D) 5120

Answer: (A) 29295 · The council's preliminary key

Q47 AP EAPCET 2025 · 27 May · Shift 1 MCQ

An eight digit number divisible by 9 is to be formed using digits from 0 to 9 without repeating the digits. The number of ways in which this can be done is

(A) $18 \times 7!$
(B) $24 \times 7!$
(C) $36 \times 7!$
(D) $72 \times 7!$

Answer: (C) $36 \times 7!$ · The council's preliminary key

Q48 AP EAPCET 2025 · 27 May · Shift 1 MCQ

A string of letters is to be formed by using 4 letters from all the letters of the word "MATHEMATICS". The number of ways this can be done such that two letters are of same kind and the other two are of different kind is

(A) 756
(B) 252
(C) 840
(D) 360

Answer: (A) 756 · The council's preliminary key

Q49 AP EAPCET 2025 · 26 May · Shift 1 MCQ

The number of positive integers less than 10000 which contain the digit 5 atleast once is

(A) 3168
(B) 3420
(C) 3439
(D) 5832

Answer: (C) 3439 · The council's preliminary key

Q50 AP EAPCET 2025 · 26 May · Shift 1 MCQ

5 men and 4 women are seated in a row. If the number of arragements in which one particular man and one particular woman are together is 'α' and the number of arrangements in which those two are not together is β, then $\alpha : \beta =$

(A) $2:7$
(B) $2:9$
(C) $4:5$
(D) $7:2$

Answer: (A) $2:7$ · The council's preliminary key

Q51 AP EAPCET 2025 · 26 May · Shift 1 MCQ

If a team of 4 persons is to be selected out of 4 married couples to play mixed doubles tennis game, then the number of ways of forming a team in which no married couple appears, is

(A) 12
(B) 8
(C) 6
(D) 24

Answer: (A) 12 · The council's preliminary key

Q52 AP EAPCET 2025 · 26 May · Shift 2 MCQ

The number of integers greater than 6000 that can be formed by using the digits 0, 5, 6, 7, 8 and 9 without repetition is

(A) 240
(B) 840
(C) 1440
(D) 1680

Answer: (C) 1440 · The council's preliminary key

Q53 AP EAPCET 2025 · 26 May · Shift 2 MCQ

The number of distinct quadratic equations $ax^2+bx+c=0$ with unequal real roots that can be formed by choosing the coefficients a, b, c $(a \neq b \neq c)$ from the set $\{0,1,2,4\}$ is

(A) 4
(B) 6
(C) 5
(D) 12

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

Q54 AP EAPCET 2025 · 26 May · Shift 2 MCQ

The number of ways of dividing 15 persons into 3 groups containing 3, 5 and 7 persons so that two particular persons are not included into the 5 persons group is

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(A) $\frac{117(11!)}{3!(7!)}$

(B) ${}^{15}C_5\ {}^{10}C_3$

(C) $90 \times \frac{13!}{7!}$

(D) ${}^{15}C_5\ {}^{8}C_3$

Answer: (A) $\frac{117(11!)}{3!(7!)}$ · The council's preliminary key

Q55 AP EAPCET 2025 · 24 May · Shift 1 MCQ

The number of integers between 10 and 10,000 such that in every integer every digit is greater than its immediate preceeding digit, is

(A) 1112

(B) 437

(C) 246

(D) 182

Answer: (C) 246 · The council's preliminary key

Q56 AP EAPCET 2025 · 24 May · Shift 1 MCQ

All letters of the word 'AGAIN' are permuted in all possible ways and the words so formed (with or without meaning) are written as in a dictionary, then the 50th word is

(A) IAANG

(B) INAGA

(C) NAAIG

(D) NAAGI

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

Q57 AP EAPCET 2025 · 24 May · Shift 1 MCQ

The number of ways in which a cricket team of 11 members can be formed out of 6 batsmen, 6 bowlers, 4 all-rounders and 4 wicket keepers by selecting atleast 4 batsmen, atleast 3 bowlers, atleast 2 all-rounders and only one wicket keeper is

(A) 11560

(B) 6480

(C) 7680

(D) 13080

Answer: (D) 13080 · The council's preliminary key

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Q58 AP EAPCET 2025 · 23 May · Shift 1 MCQ

If 3 sisters and 8 brothers are together playing a game, then the number of ways in which all the sisters and brothers are to be seated around a circle such that all the three sisters are not seated together is

(A) $8! \times 504$
(B) $11! \times 8$
(C) $7! \times 210$
(D) $8! \times 84$

Answer: (D) $8! \times 84$ · The council's preliminary key

Q59 AP EAPCET 2025 · 23 May · Shift 1 MCQ

Out of 8 students in a classroom, 4 of them are chosen and they are arranged around a table. If the remaining 4 are arranged in a row, then the total number of arrangements that can be made with those 8 students is

(A) 2100
(B) 1680
(C) 1440
(D) 1050

Answer: (A) 2100 · The council's preliminary key

Q60 AP EAPCET 2025 · 23 May · Shift 2 MCQ

If all possible 4 digit numbers are formed by choosing 4 different digits from the given digits 1, 2, 3, 5, 8 then, the sum of all such 4 digit numbers is

(A) 199980
(B) 999990
(C) 506616
(D) 479952

Answer: (C) 506616 · The council's preliminary key

Q61 AP EAPCET 2025 · 23 May · Shift 2 MCQ

The number of ways of forming the ordered pairs (p, q) such that $p > q$ by choosing p and q from the first 50 natural numbers is

(A) 1275
(B) 1250
(C) 1225
(D) 1200

Answer: (C) 1225 · The council's preliminary key

Q62 AP EAPCET 2025 · 23 May · Shift 2 MCQ

The number of ways in which a committee of 7 members can be formed from 6 teachers, 5 fathers and 4 students in such a way that at least one from each group is included and teachers form the majority among them, is

(A) 1865
(B) 2370
(C) 3050
(D) 4380

Answer: (B) 2370 · The council's preliminary key

Q63 AP EAPCET 2025 · 22 May · Shift 1 MCQ

All the letters of the word LETTER are arranged in all possible ways and the words (with or without meaning) thus formed are arranged in dictionary order. Then the rank of the word TETLER is

(A) 171
(B) 138
(C) 141
(D) 168

Answer: (C) 141 · The council's preliminary key

Q64 AP EAPCET 2025 · 22 May · Shift 1 MCQ

5 digit numbers are formed by using the digits 0, 1, 2, 3, 5, 7 without repetetion and all of them are arranged in ascending order. Then the rank of the number 70513 is

(A) 500
(B) 499
(C) 497
(D) 503

Answer: (A) 500 · The council's preliminary key

Q65 AP EAPCET 2025 · 22 May · Shift 1 MCQ

The number of divisors of 7! is

(A) 72
(B) 24
(C) 64
(D) 60

Answer: (D) 60 · The council's preliminary key

Q66 AP EAPCET 2025 · 22 May · Shift 2 MCQ

If ${}^{27}\mathrm{P}_{r+7} = 7722\ {}^{25}\mathrm{P}_{(r+4)}$, then $r =$

(A) 9
(B) 12
(C) 11
(D) 10

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

Q67 AP EAPCET 2025 · 22 May · Shift 2 MCQ

If the number of diagonals of a regular polygon is 35, then the number of sides of the polygon is

(A) 12
(B) 9
(C) 10
(D) 11

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

Q68 AP EAPCET 2025 · 22 May · Shift 2 MCQ

If four letters are chosen from the letters of the word ASSIGNMENT and are arranged in all possible ways to form 4 letter words (with or without meaning), then total number of such words that can be formed is

(A) 1680
(B) 2184
(C) 2196
(D) 2190

Answer: (D) 2190 · The council's preliminary key

Q69 AP EAPCET 2025 · 21 May · Shift 1 MCQ

The number of all possible positive integral solutions of the equation $xyz = 30$ is

(A) 24
(B) 25
(C) 26
(D) 27

Answer: (D) 27 · The council's preliminary key

Q70 AP EAPCET 2025 · 21 May · Shift 1 MCQ

The number of all five letter words (with or without meaning) having atleast one repeated letter that can be formed by using the letters of the word INCONVENIENCE is

(A) 2025
(B) 2765
(C) 3265
(D) 3605

Answer: (D) 3605 · The council's preliminary key

Q71 AP EAPCET 2025 · 21 May · Shift 1 MCQ

The number of ways of arranging all the letters of the word PERFECTION such that there must be exactly two consonants between any two vowels is

(A) $4! + 6!$
(B) $3! + 6!$
(C) $2!\,3!\,6!$
(D) $\frac{6!}{4!}$

Answer: (C) $2!\,3!\,6!$ · The council's preliminary key

Q72 AP EAPCET 2025 · 21 May · Shift 2 MCQ

If all the letters of the word COMBINATION are arranged in all possible ways to form 11 letter words (with or without meaning), then the number of words among them in which C and N occupy the end positions and no vowel appears exactly in the middle position is

(A) $\frac{5}{2}(8!)$
(B) $4(8!)$
(C) $2(8!)$
(D) $36(7!)$

Answer: (C) $2(8!)$ · The council's preliminary key

Q73 AP EAPCET 2025 · 21 May · Shift 2 MCQ

The number of ways of distributing 3 dozen fruits (no two fruits are identical) to 9 persons such that each gets the same number of fruits is

(A) $\frac{36!}{(9!)^4}$

(B) $\frac{36!}{(4!)^9}$

(C) ${}^{36}\mathrm{P}_9 \times 4!$

(D) $\frac{36!}{4!(9!)^4}$

Answer: (B) $\frac{36!}{(4!)^9}$ · The council's preliminary key

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Q74 TS EAPCET 2025 · 4 May · Shift 1 MCQ

5 boys and 5 girls have to sit around a table. The number of ways in which all of them can sit so that no two boys and no two girls are together is

(A) 14400

(B) 2880

(C) 576

(D) 625

Answer: (B) 2880 · The council's preliminary key

Q75 TS EAPCET 2025 · 4 May · Shift 1 MCQ

All possible words (with or without meaning) that contain the word 'GENTLE' are formed using all the letters of the word 'INTELLIGENCE'. Then the number of words in which the word 'GENTLE' appears among the first nine positions only is

(A) 1440

(B) 5040

(C) 2520

(D) 720

Answer: (A) 1440 · The council's preliminary key

Q76 TS EAPCET 2025 · 4 May · Shift 1 MCQ

${}^{20}\mathrm{P}_5 - {}^{19}\mathrm{P}_5 =$

(A) ${}^{19}\mathrm{P}_4$

(B) $4({}^{19}\mathrm{P}_4)$

(C) $5!(646)$

(D) $6!(646)$

Answer: (D) $6!(646)$ · The council's preliminary key

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Q77 TS EAPCET 2025 · 4 May · Shift 2 MCQ

All the letters of the word MOTHER are arranged in all possible ways and the resulting words (may or may not have meaning) are arranged as in the dictionary. The number of words that appear after the word MOTHER is

(A) 309
(B) 310
(C) 410
(D) 411

Answer: (D) 411 · The council's preliminary key

Q78 TS EAPCET 2025 · 4 May · Shift 2 MCQ

The number of positive integral solutions of $\frac{1}{x}+\frac{1}{y}=\frac{1}{2025}$ is

(A) 105
(B) 45
(C) 135
(D) 25

Answer: (B) 45 · The council's preliminary key

Q79 TS EAPCET 2025 · 4 May · Shift 2 MCQ

The number of positive integral solutions of $xyz=60$ is

(A) ${}^{59}C_2$
(B) ${}^{4}C_2 \times {}^{3}C_2 \times {}^{3}C_2$
(C) ${}^{4}C_3$
(D) ${}^{3}C_1 \times {}^{4}C_0 \times {}^{4}C_4$

Answer: (B) ${}^{4}C_2 \times {}^{3}C_2 \times {}^{3}C_2$ · The council's preliminary key

Q80 TS EAPCET 2025 · 3 May · Shift 1 MCQ

There are 15 stations on a train route and the train has to be stopped at exactly 5 stations among these 15 stations. If it stops at atleast two consecutive stations, then the number of ways in which the train can be stopped is

(A) ${}^{11}C_5$
(B) ${}^{15}C_5$
(C) ${}^{15}C_5 - {}^{11}C_5$
(D) ${}^{15}C_{10} - {}^{9}C_5$

Answer: (C) ${}^{15}C_5 - {}^{11}C_5$ · The council's preliminary key

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Q81 TS EAPCET 2025 · 3 May · Shift 1 MCQ

Number of all possible ways of distributing eight identical apples among three persons is

(A) 45
(B) 42
(C) 39
(D) 36

Answer: (A) 45 · The council's preliminary key

Q82 TS EAPCET 2025 · 3 May · Shift 1 MCQ

Number of all possible words (with or without meaning) that can be formed using all the letters of the word CABINET in which neither the word CAB nor the word NET appear is

(A) 5040
(B) 4806
(C) 4800
(D) 5034

Answer: (B) 4806 · The council's preliminary key

Q83 TS EAPCET 2025 · 3 May · Shift 2 MCQ

If all the letters of the word ACADEMICIAN are permuted in all possible ways then the number of permutations in which no two A's are together and all the consonants are together is

(A) 7200
(B) 14400
(C) 3600
(D) 1800

Answer: (A) 7200 · The council's preliminary key

Q84 TS EAPCET 2025 · 3 May · Shift 2 MCQ

The number of all possible three letter words that can be formed by choosing three letters from the letters of the word FEBRUARY so that a vowel always occupies the middle place is

(A) 90
(B) 93
(C) 126
(D) 129

Answer: (B) 93 · The council's preliminary key

Q85 TS EAPCET 2025 · 3 May · Shift 2 MCQ

The number of ways in which 6 boys and 4 girls can be arranged in a row such that between any two girls there must be exactly 2 boys is

(A) $6!5!$
(B) $(72)6!$
(C) $(144)5!$
(D) $4!7!$

Answer: (C) $(144)5!$ · The council's preliminary key

Q86 TS EAPCET 2025 · 2 May · Shift 1 MCQ

A student has to answer a multiple-choice question having 5 alternatives in which two or more than two alternatives are correct. Then the number of ways in which the student can answer that question is

(A) 31
(B) 30
(C) 27
(D) 26

Answer: (D) 26 · The council's preliminary key

Q87 TS EAPCET 2025 · 2 May · Shift 1 MCQ

Number of triangles whose vertices are the points (x, y) in the XY-plane with integer coordinates satisfying $0 \leq x \leq 4$ and $0 \leq y \leq 4$ is

(A) 2300
(B) 2260
(C) 2160
(D) 2230

Answer: (C) 2160 · The council's preliminary key

Q88 TS EAPCET 2025 · 2 May · Shift 1 MCQ

If all the letters of the word 'HANDLE' are permuted in all possible ways and the words (with or without meaning) thus formed are arranged in dictionary order, then the rank of the word 'HELAND' is

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(A) 420
(B) 422
(C) 456
(D) 475

Answer: (B) 422 · The council's preliminary key

Q89 TS EAPCET 2025 · 2 May · Shift 2 MCQ

The number of non negative integral solutions of the equation $x + y + z + t = 10$ when $x \geq 2$, $z \geq 5$ is

(A) 80
(B) 20
(C) 50
(D) 10

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

Q90 TS EAPCET 2025 · 2 May · Shift 2 MCQ

The number of integers lying between 1000 and 10000 such that the sum of all the digits in each of those numbers becomes 30 is

(A) 84
(B) 96
(C) 45
(D) 75

Answer: (A) 84 · The council's preliminary key

Q91 TS EAPCET 2025 · 2 May · Shift 2 MCQ

If all the letters of the word MOST are permuted and the words (with or without meaning) thus obtained are arranged in the dictionary order then the rank of the word STOM when counted from the rank of the word MOST, is

(A) 24
(B) 21
(C) 12
(D) 18

Answer: (D) 18 · The council's preliminary key

Q92 AP EAPCET 2024 · 23 May · Shift 1 MCQ

Among the 4 digit numbers formed using the digits 0, 1, 2, 3, 4 when repetition of digits allowed, the number of numbers which are divisible by 4 is

(A) 140
(B) 160
(C) 180
(D) 200

Answer: (B) 160 · The council's preliminary key

Q93 AP EAPCET 2024 · 23 May · Shift 1 MCQ

The number of ways of arranging 2 red, 3 white and 5 yellow roses of different sizes into a garland such that no two yellow roses come together is

(A) 2880
(B) 144
(C) 1440
(D) 288

Answer: (C) 1440 · The council's preliminary key

Q94 AP EAPCET 2024 · 23 May · Shift 1 MCQ

The number of ways of selecting 3 numbers that are in GP from the set $\{1, 2, 3, \ldots, 100\}$ is

(A) 18
(B) 52
(C) 14
(D) 53

Answer: (D) 53 · The council's preliminary key

Q95 AP EAPCET 2024 · 22 May · Shift 1 MCQ

All the letters of the word TABLE are permuted and the strings of letters (may or may not have meaning) thus formed are arranged in dictionary order. Then the rank of the word TABLE counted from the rank of the word BLATE is

(A) 50
(B) 97
(C) 61
(D) 37

Answer: (C) 61 · The council's preliminary key

Q96 AP EAPCET 2024 · 22 May · Shift 1 MCQ

5 boys and 6 girls are arranged in all possible ways. Let X denote the number of linear arrangements in which no two boys sit together and Y denote the number of linear arrangements in which no two

girls sit together. If Z denote the number of ways of arranging all of them around a circular table such that no two boys sit together, then X: Y: Z =

(A) $1:1:21$
(B) $21:1:1$
(C) $7:5:5$
(D) $4:3:3$

Answer: (B) $21:1:1$ · The council's preliminary key

Q97 AP EAPCET 2024 · 22 May · Shift 1 MCQ

The number of ways of distributing 15 apples to three persons A, B, C such that A and C each get at least 2 apples and B gets at most 5 apples is

(A) 57
(B) 131
(C) 156
(D) 251

Answer: (A) 57 · The council's preliminary key

Q98 AP EAPCET 2024 · 22 May · Shift 2 MCQ

There were two women participating with some men in a chess tournament. Each participant played two games with the other. The number of games that the men played between themselves is 66 more than that of the men played with the women. Then the total number of participants in the tournament is

(A) 17
(B) 13
(C) 11
(D) 19

Answer: (B) 13 · The council's preliminary key

Q99 AP EAPCET 2024 · 22 May · Shift 2 MCQ

The number of ways of arranging 9 men and 5 women around a circular table so that no two women come together are

(A) $8!\,{}^{8}P_{5}$
(B) $9!\,{}^{9}P_{5}$
(C) $8!\,{}^{9}P_{5}$
(D) $8!\,5!$

Answer: (C) $8!\,{}^{9}P_{5}$ · The council's preliminary key

Q100 AP EAPCET 2024 · 22 May · Shift 2 MCQ

If there are 6 alike fruits, 7 alike vegetables and 8 alike biscuits, then the number of ways of selecting any number of things out of them such that at least one from each category is selected, is

(A) 504
(B) 336
(C) 503
(D) 335

Answer: (B) 336 · The council's preliminary key

Q101 AP EAPCET 2024 · 21 May · Shift 1 MCQ

The number of 5 digit odd numbers greater than 40,000 that can be formed by using 3, 4, 5, 6, 7, 0 so that at least one of its digit must be repeated is

(A) 2592
(B) 240
(C) 3032
(D) 2352

Answer: (D) 2352 · The council's preliminary key

Q102 AP EAPCET 2024 · 21 May · Shift 1 MCQ

The number of ways in which 3 men and 3 women can be arranged in a row of 6 seats, such that the first and last seats must be filled by men is

(A) 720
(B) 36
(C) 144
(D) 72

Answer: (C) 144 · The council's preliminary key

Q103 AP EAPCET 2024 · 21 May · Shift 1 MCQ

If a committee of 10 members is to be formed from 8 men and 6 women, then the number of different possible committees in which the men are in majority is

(A) 931
(B) 175
(C) 48
(D) 595

Answer: (D) 595 · The council's preliminary key

Q104 AP EAPCET 2024 · 21 May · Shift 2 MCQ

There are 6 different novels and 3 different poetry books on a table. If 4 novels and 1 poetry book are to be selected and arranged in a row on a shelf such that the poetry book is always in the middle, then the number of such possible arrangements is

(A) 270
(B) 180
(C) 540
(D) 1080

Answer: (D) 1080 · The council's preliminary key

Q105 AP EAPCET 2024 · 21 May · Shift 2 MCQ

If a five digit number divisible by 3 is to be formed using the numbers 0, 1, 2, 3, 4 and 5 without repetition, then the total number of ways this can be done is

(A) 120
(B) 144
(C) 192
(D) 216

Answer: (D) 216 · The council's preliminary key

Q106 AP EAPCET 2024 · 21 May · Shift 2 MCQ

Four digit numbers with all digits distinct are formed using the digits $1, 2, 3, 4, 5, 6, 7$ in all possible ways. If p is the total number of numbers thus formed and q is the number of numbers greater than 3400 among them, then $p : q =$

(A) $3 : 2$
(B) $4 : 3$
(C) $6 : 5$
(D) $7 : 4$

Answer: (A) $3 : 2$ · The council's preliminary key

Q107 AP EAPCET 2024 · 20 May · Shift 1 MCQ

If a polygon of n sides has 275 diagonals, then n is

(A) 25
(B) 35
(C) 20
(D) 15

Answer: (A) 25 · The council's preliminary key

Q108 AP EAPCET 2024 · 20 May · Shift 1 MCQ

The number of positive divisors of 1080 is

(A) 30
(B) 32
(C) 23
(D) 31

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

Q109 AP EAPCET 2024 · 20 May · Shift 2 MCQ

A test containing 3 objective type of questions is conducted in a class. Each question has 4 options and only one option is the correct answer. No two students of the class have answered identically and no student has written all correct answers. If every student has attempted all the questions, then the maximum possible number of students who has written the test is

(A) 80
(B) 63
(C) 15
(D) 11

Answer: (B) 63 · The council's preliminary key

Q110 AP EAPCET 2024 · 20 May · Shift 2 MCQ

The number of numbers lying between 1000 and 10000 such that every number contains the digits 3 and 7 only once without repetition is

(A) 1140
(B) 918
(C) 720
(D) 810

Answer: (C) 720 · The council's preliminary key

Q111 AP EAPCET 2024 · 20 May · Shift 2 MCQ

The number of ways in which 17 apples can be distributed among four guests such that each guest gets at least 3 apples is

(A) 1140
(B) 336
(C) 36
(D) 56

Answer: (D) 56 · The council's preliminary key

Q112 AP EAPCET 2024 · 19 May · Shift 2 MCQ

If all the letters of the word MASTER are permuted in all possible ways and words (with or without meaning) thus formed are arranged in dictionary order, then the rank of the word MASTER is

(A) 357
(B) 527
(C) 257
(D) 752

Answer: (C) 257 · The council's preliminary key

Q113 AP EAPCET 2024 · 19 May · Shift 2 MCQ

The number of different permutations that can be formed by taking 4 letters at a time from the letters of the word 'REPETITION' is

(A) 1380
(B) 1218
(C) 1398
(D) 1286

Answer: (C) 1398 · The council's preliminary key

Q114 AP EAPCET 2024 · 18 May · Shift 1 MCQ

The number of different ways of preparing a garland by using 6 distinct white roses and 6 distinct red roses such that no two red roses come together is

(A) 43200
(B) 86400
(C) 59200
(D) 76800

Answer: (A) 43200 · The council's preliminary key

Q115 AP EAPCET 2024 · 18 May · Shift 1 MCQ

The number of ways a committee of 8 members can be formed from a group of 10 men and 8 women such that the committee contains at most 5 men and at least 5 women is

(A) 8061
(B) 8612
(C) 6082
(D) 8271

Answer: (A) 8061 · The council's preliminary key

Q116 AP EAPCET 2024 · 18 May · Shift 1 MCQ

If all the letters of the word CRICKET are permuted in all possible ways and the words (with or without meaning) thus formed are arranged in the dictionary order, then the rank of the word CRICKET is

(A) 561
(B) 531
(C) 546
(D) 513

Answer: (B) 531 · The council's preliminary key

Q117 TS EAPCET 2024 · 11 May · Shift 1 MCQ

The sum of all the 4-digit numbers formed by taking all the digits from 0, 3, 6, 9 without repetition is

(A) 119592
(B) 115992
(C) 211599
(D) 119952

Answer: (B) 115992 · The council's preliminary key

Q118 TS EAPCET 2024 · 11 May · Shift 1 MCQ

The number of ways in which 6 distinct things can be distributed into 2 boxes so that no box is empty is

(A) 36
(B) 64
(C) 62
(D) 34

Answer: (C) 62 · The council's preliminary key

Q119 TS EAPCET 2024 · 11 May · Shift 1 MCQ

Number of ways in which the number 831600 can be split into two factors which are relatively prime is

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(A) 8
(B) 64
(C) 32
(D) 16

Answer: (D) 16 · The council's preliminary key

Q120 TS EAPCET 2024 · 10 May · Shift 1 MCQ

All the letters of the word 'COLLEGE' are arranged in all possible ways and all the seven letter words (with or without meaning) thus formed are arranged in the dictionary order. Then the rank of the word 'COLLEGE' is

(A) 119
(B) 149
(C) 176
(D) 179

Answer: (D) 179 · The council's preliminary key

Q121 TS EAPCET 2024 · 10 May · Shift 1 MCQ

If all the possible 3-digit numbers are formed using the digits 1, 3, 5, 7, 9 without repeating any digit, then the number of such 3-digit numbers which are divisible by 3 is

(A) 6
(B) 12
(C) 18
(D) 24

Answer: (D) 24 · The council's preliminary key

Q122 TS EAPCET 2024 · 10 May · Shift 1 MCQ

A question paper has 3 parts A, B, C. Part A contains 7 questions, part B contains 5 questions and Part C contains 3 questions. If a candidate is allowed to answer not more than 4 questions from part A; not more than 3 questions from part B and not more than 2 questions from part C, then the number of ways in which a candidate can answer exactly 7 questions is

(A) 4655
(B) 4025
(C) 3675
(D) 2625

Answer: (A) 4655 · The council's preliminary key

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Q123 TS EAPCET 2024 · 10 May · Shift 2 MCQ

The number of ways of arranging all the letters of the word "COMBINATIONS" around a circle so that no two vowels come together is

(A) $\frac{7!\,6!}{(2!)^4}$

(B) $\frac{7!\,6!}{(2!)^3}$

(C) $\frac{{}^8P_5 \times 6!}{(2!)^3}$

(D) $\frac{7! \times {}^8P_5}{(2!)^3}$

Answer: (A) $\frac{7!\,6!}{(2!)^4}$ · The council's preliminary key

Q124 TS EAPCET 2024 · 10 May · Shift 2 MCQ

If all the numbers which are greater than 6000 and less than 10000 are formed with the digits 3, 5, 6, 7, 8 without repetition of the digits, then the difference between the number of odd numbers and the number of even numbers among them is

(A) ${}^4P_3$

(B) $3({}^4P_2)$

(C) ${}^5P_3$

(D) $2({}^4P_3)$

Answer: (A) ${}^4P_3$ · The council's preliminary key

Q125 TS EAPCET 2024 · 10 May · Shift 2 MCQ

A man has 7 relatives, 4 of them are ladies and 3 gents; his wife has 7 other relatives, 3 of them are ladies and 4 gents. The number of ways they can invite them to a party of 3 ladies and 3 gents so that there are 3 of man's relatives and 3 of wife's relatives, is

(A) 341

(B) 161

(C) 485

(D) 435

Answer: (C) 485 · The council's preliminary key

Q126 TS EAPCET 2024 · 9 May · Shift 1 MCQ

The sum of all the 4-digit numbers formed by taking all the digits from 2, 3, 5, 7 without repetition, is

(A) 331122
(B) 123312
(C) 113322
(D) 132132

Answer: (C) 113322 · The council's preliminary key

Q127 TS EAPCET 2024 · 9 May · Shift 1 MCQ

The number of ways in which 15 identical gold coins can be distributed among 3 persons such that each one gets atleast 3 gold coins is

(A) 27
(B) 28
(C) 22
(D) 25

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

Q128 TS EAPCET 2024 · 9 May · Shift 1 MCQ

The number of all possible combinations of 4 letters which are taken from the letters of the word ACCOMMODATION is

(A) 167
(B) 161
(C) 160
(D) 157

Answer: (A) 167 · The council's preliminary key

Q129 TS EAPCET 2024 · 9 May · Shift 2 MCQ

Among the 4-digit numbers that can be formed using the digits 1, 2, 3, 4, 5, 6 without repeating any digit, the number of numbers which are divisible by 6 is

(A) 60
(B) 66
(C) 52
(D) 57

Answer: (A) 60 · The council's preliminary key

Q130 TS EAPCET 2024 · 9 May · Shift 2 MCQ

If the number of circular permutations of 9 distinct things taken 5 at a time is n_1 and the number of linear permutations of 8 distinct things taken 4 at a time is n_2, then $\frac{n_1}{n_2} =$

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(A) $\frac{5}{9}$
(B) 2
(C) $\frac{1}{2}$
(D) $\frac{9}{5}$

Answer: (D) $\frac{9}{5}$ · The council's preliminary key

Q131 TS EAPCET 2024 · 9 May · Shift 2 MCQ

The number of ways in which 4 different things can be distributed to 6 persons so that no person gets all the things is

(A) 1292
(B) 1296
(C) 1290
(D) 4090

Answer: (C) 1290 · The council's preliminary key

Q132 TS EAPCET 2024 · 9 May · Shift 2 MCQ

Among the 5 married couples, if the names of 5 men are matched with the names of their wives randomly, then the probability that no man is matched with name of his wife is

(A) $\frac{9}{20}$
(B) $\frac{1}{5}$
(C) $\frac{11}{30}$
(D) $\frac{17}{60}$

Answer: (C) $\frac{11}{30}$ · The council's preliminary key

Q133 AP EAPCET 2023 · 19 May · Shift 1 MCQ

The number of natural numbers less than 500 in which no two digits are repeated is

(A) 374
(B) 376
(C) 378
(D) 380

Answer: (C) 378 · The council's preliminary key

Q134 AP EAPCET 2023 · 19 May · Shift 1 MCQ

If $N(n) = n\prod_{r=1}^{2023}(n^2 - r^2)$ $(n > 2023)$, then ${}^{N}C_{N-1}$ when $n = 2024$ is

(A) $(4047)!$
(B) $(4048)!$
(C) $(6023)!$
(D) $(6069)!$

Answer: (A) $(4047)!$ · The council's preliminary key

Q135 AP EAPCET 2023 · 18 May · Shift 1 MCQ

The number of odd positive divisors of 67500 is

(A) 16
(B) 18
(C) 20
(D) 22

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

Q136 AP EAPCET 2023 · 18 May · Shift 1 MCQ

The least value of n for which ${}^{(n-1)}C_2 + {}^{(n-1)}C_3 > {}^{n}C_2$ is

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

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

Q137 AP EAPCET 2023 · 18 May · Shift 1 MCQ

${}^{2n}C_4 : {}^{n}C_3 = 99 : 4 \Rightarrow n =$

(A) 7
(B) 6
(C) 8
(D) 5

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

Q138 AP EAPCET 2023 · 18 May · Shift 2 MCQ

A question paper has two sections A and B in which section–A has 8 questions and section–B has 6 questions. A student has to answer a total of 10 questions, choosing atleast 4 questions from section–A and atleast 3 questions from section–B. Then the number of ways a student can answer that paper is

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(A) 800
(B) 820
(C) 840
(D) 986

Answer: (D) 986 · The council's preliminary key

Q139 AP EAPCET 2023 · 18 May · Shift 2 MCQ

If 5 dice are rolled simultaneously, then the number of ways of getting a total of seven of the numbers appear on their faces is

(A) 12
(B) 15
(C) 20
(D) 25

Answer: (B) 15 · The council's preliminary key

Q140 AP EAPCET 2023 · 18 May · Shift 2 MCQ

The numbers of positive even divisors of 6300 is

(A) 30
(B) 24
(C) 18
(D) 36

Answer: (D) 36 · The council's preliminary key

Q141 AP EAPCET 2023 · 17 May · Shift 1 MCQ

The number of all 8 digit odd numbers is

(A) 45×10^6
(B) 90×10^6
(C) 9×10^8
(D) 9×10^6

Answer: (A) 45×10^6 · The council's preliminary key

Q142 AP EAPCET 2023 · 17 May · Shift 1 MCQ

The number of all four digit numbers which begin with 4 and end with either zero or five is

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(A) 200
(B) 64
(C) 256
(D) 32

Answer: (A) 200 · The council's preliminary key

Q143 AP EAPCET 2023 · 17 May · Shift 1 MCQ

If $f(n) = n!(31-n)!$, where $n \in \{0, 1, 2, \ldots, 31\}$, then the minimum value of $f(n)$ is

(A) $(15!)(15!)$
(B) $(15!)(14!)$
(C) $(14!)(16!)$
(D) $(15!)(16!)$

Answer: (D) $(15!)(16!)$ · The council's preliminary key

Q144 AP EAPCET 2023 · 17 May · Shift 2 MCQ

The number of arrangements of the word K A N G A R O O in which As' do not appear together is

(A) 2520
(B) 3780
(C) 7650
(D) 7560

Answer: (D) 7560 · The council's preliminary key

Q145 AP EAPCET 2023 · 16 May · Shift 1 MCQ

If 2^n divides 16! and 2^{n+1} does not divide 16!, then $n =$

(A) 14
(B) 15
(C) 16
(D) 17

Answer: (B) 15 · The council's preliminary key

Q146 AP EAPCET 2023 · 16 May · Shift 1 MCQ

The least value of n such that ${}^{(n-1)}C_6 + {}^{(n-1)}C_7 < {}^{n}C_8$ is

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(A) 14
(B) 15
(C) 16
(D) 17

Answer: (C) 16 · The council's preliminary key

Q147 AP EAPCET 2023 · 16 May · Shift 1 MCQ

If a seven digit number formed with distinct digits 4, 6, 9, 5, 3, x and y is divisible by 3, then the number of such ordered pairs (x, y) is

(A) 7
(B) 8
(C) 9
(D) 10

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

Q148 AP EAPCET 2023 · 16 May · Shift 2 MCQ

The greatest integer r such that 30^r divides $30!$ is

(A) 8
(B) 7
(C) 6
(D) 5

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

Q149 AP EAPCET 2023 · 16 May · Shift 2 MCQ

The number of arrangements of the letters of the word ARRANGEMENT in which two Es' do not occur adjacently is

(A) $\frac{9}{8}(10)!$
(B) $\frac{9}{4}(10)!$
(C) $\frac{9}{16}(10)!$
(D) $\frac{9}{32}(10)!$

Answer: (C) $\frac{9}{16}(10)!$ · The council's preliminary key

Q150 AP EAPCET 2023 · 16 May · Shift 2 MCQ

The number of words that can be formed using the letters of the word VOWEL so that vowels remain always together is

(A) 60
(B) 48
(C) 36
(D) 45

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

Q151 AP EAPCET 2023 · 16 May · Shift 2 MCQ

The number of elements in the set $\{x \in \mathbb{N} : {}^{20-2x}C_{x-3} \in \mathbb{N}\}$ is

(A) 3
(B) 4
(C) 5
(D) 6

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

Q152 AP EAPCET 2023 · 15 May · Shift 1 MCQ

If the number of diagonals of a regular polygon of n sides is 104, then $n =$

(A) 19
(B) 16
(C) 13
(D) 11

Answer: (B) 16 · The council's preliminary key

Q153 AP EAPCET 2023 · 15 May · Shift 1 MCQ

The number of natural numbers less than 10000 which are divisible by 5 and that no digit is repeated in the same number, is

(A) 802
(B) 602
(C) 702
(D) 1106

Answer: (D) 1106 · The council's preliminary key

Q154 AP EAPCET 2023 · 15 May · Shift 1 MCQ

A team of 5 students is to be selected from 12 students. If two particular students are to be included in that team, then the number of ways that such team can be selected is

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(A) 792
(B) 180
(C) 120
(D) 90

Answer: (C) 120 · The council's preliminary key

Q155 AP EAPCET 2023 · 15 May · Shift 2 MCQ

The number of non-negative integral solutions of $x_1 + x_2 + x_3 + x_4 = 10$ is

(A) 120
(B) 144
(C) 256
(D) 286

Answer: (D) 286 · The council's preliminary key

Q156 AP EAPCET 2023 · 15 May · Shift 2 MCQ

The number of six digit natural numbers that can be formed with the digits $2, 3, 4, 0, 5, 6, 7, 8$ is

(A) 7×2^{12}
(B) 7×2^{9}
(C) 7×2^{6}
(D) 7×2^{15}

Answer: (D) 7×2^{15} · The council's preliminary key

Q157 TS EAMCET 2023 · 14 May · Shift 1 MCQ

The number of diagonals of a polygon is 35. If A, B are two distinct vertices of this polygon, then the number of all those triangles formed by joining three vertices of the polygon having AB as one of its sides is

(A) 1
(B) 8
(C) 10
(D) 12

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

Q158 TS EAMCET 2023 · 14 May · Shift 1 MCQ

There are 10 points in a plane, of which no three points are collinear except 4. Then, the number of distinct triangles that can be formed by joining any three points of these ten points, such that at least one of the vertices of every triangle formed is from the given 4 collinear points is

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(A) 80
(B) 100
(C) 96
(D) 116

Answer: (C) 96 · The council's preliminary key

Q159 TS EAMCET 2023 · 14 May · Shift 1 MCQ

A student is asked to answer 10 out of 13 questions in an examination such that he must answer atleast four questions from the first five questions. Then the total number of possible choices available to him is

(A) 186
(B) 176
(C) 286
(D) 196

Answer: (D) 196 · The council's preliminary key

Q160 TS EAMCET 2023 · 14 May · Shift 2 MCQ

The number of odd numbers greater than 6,00,000 that can be formed by using the digits 3,6,7,8,9,0 without repetition is

(A) 480
(B) 240
(C) 288
(D) 500

Answer: (B) 240 · The council's preliminary key

Q161 TS EAMCET 2023 · 14 May · Shift 2 MCQ

The number of ways in which 6 men and 4 women can be seated around a table so that a particular man and a particular woman never sit adjacent to each other is

(A) $9!$
(B) $7 \times 8!$
(C) $8 \times 8!$
(D) $6 \times 7!$

Answer: (B) $7 \times 8!$ · The council's preliminary key

Q162 TS EAMCET 2023 · 14 May · Shift 2 MCQ

There are three sections in a question paper, each section containing 4 questions. If a candidate has to answer only 5 questions from this paper without leaving any section, then the number of ways in

which a candidate can make the choice of questions is

(A) 624
(B) 704
(C) 384
(D) 432

Answer: (A) 624 · The council's preliminary key

Q163 TS EAMCET 2023 · 13 May · Shift 1 MCQ

If n, r are two positive integers such that $1 \leq r < n$, then

$$^{n}\mathrm{P}_{r+1} + r^{2}\,{}^{n-1}\mathrm{P}_{r-1} + (r+1)\,{}^{n-1}\mathrm{P}_{r} + r\,{}^{n-1}\mathrm{P}_{r-1} =$$

(A) $^{n+2}\mathrm{P}_{r+2}$
(B) $^{n+2}\mathrm{P}_{r+1}$
(C) $(n+1)!$
(D) $^{n+1}\mathrm{P}_{r+1}$

Answer: (D) $^{n+1}\mathrm{P}_{r+1}$ · The council's preliminary key

Q164 TS EAMCET 2023 · 13 May · Shift 1 MCQ

The number of ways in which n boys and n girls can be arranged in a row such that all the boys are together and all the girls are also together is equal to

(A) the number of ways in which n boys and n girls can be arranged in a row
(B) the number of ways in which n boys and n girls can be arranged in a row such that all the girls are together
(C) the number of ways in which n boys and n girls can be arranged in a row such that no two girls are together
(D) the number of ways in which n boys and n girls can be arranged in a row such that no two girls are together and no two boys are together

Answer: (D) the number of ways in which n boys and n girls can be arranged in a row such that no two girls are together and no two boys are together · The council's preliminary key

Q165 TS EAMCET 2023 · 13 May · Shift 1 MCQ

Among the positive divisors of the number 12600, if n_1 is the number of divisors which are multiples of 3 and n_2 is the number of divisors which are multiples of 14, then $n_1 + n_2 =$

(A) 75
(B) 57
(C) 51
(D) 33

Answer: (A) 75 · The council's preliminary key

Q166 TS EAMCET 2023 · 13 May · Shift 2 MCQ

All the letters of the word 'INDEED' are taken and permuted in all possible ways to form distinct 6 letter strings (words with or without meaning). If they are listed in dictionary order, then the rank position of the string 'NIDDEE' is

(A) 349
(B) 325
(C) 163
(D) 175

Answer: (D) 175 · The council's preliminary key

Q167 TS EAMCET 2023 · 13 May · Shift 2 MCQ

All possible 5 digit numbers each having 5 distinct digits are formed using the digits 1, 2, 3, 5, 6, 8. Among them, the number of numbers which are divisible by 3 but not by 6 is

(A) 120
(B) 72
(C) 48
(D) 240

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

Q168 TS EAMCET 2023 · 13 May · Shift 2 MCQ

The total number of ways of forming a committee of 5 members out of 7 Indians, 6 Americans, 5 Russians and 4 Australians so that every committee contains at least one member from each country is

(A) 3360
(B) 6720
(C) 7200
(D) 7560

Answer: (D) 7560 · The council's preliminary key

Q169 TS EAMCET 2023 · 12 May · Shift 1 MCQ

The number of ways of arranging all the letters of the word "SUNITHA" so that the vowels always occupy the first, middle and last places is

(A) 5040
(B) 24
(C) 3
(D) 144

Answer: (D) 144 · The council's preliminary key

Q170 TS EAMCET 2023 · 12 May · Shift 1 MCQ

The number of all four digit numbers that can be formed with the digits 0, 1, 2, 3, 4, 5 when the repetition of the digits is not allowed, is

(A) 360
(B) 600
(C) 240
(D) 300

Answer: (D) 300 · The council's preliminary key

Q171 TS EAMCET 2023 · 12 May · Shift 1 MCQ

The number of four digit numbers that can be formed using the digits 1, 2, 3, 4, 5, 6, 7 which are divisible by 4, when the repetition of any digit is not allowed, is

(A) 100
(B) 200
(C) 300
(D) 400

Answer: (B) 200 · The council's preliminary key

Q172 TS EAMCET 2023 · 12 May · Shift 2 MCQ

The total number of all those 3-digit numbers in which the sum of all the digits in each of them is 10, is

(A) 54
(B) 55
(C) 56
(D) 58

Answer: (A) 54 · The council's preliminary key

Q173 TS EAMCET 2023 · 12 May · Shift 2 MCQ

All the letters of the word 'MOTHER' are written in all possible ways and the strings of letters (with or without meaning) so formed are written as in a dictionary order. Then the position of the word 'THROEM' is

(A) 642
(B) 648
(C) 647
(D) 646

Answer: (C) 647 · The council's preliminary key

Q174 TS EAMCET 2023 · 12 May · Shift 2 MCQ

A student is allowed to select at most n books from a collection of $(2n+1)$ books. If the total number of ways in which he can select at least one book is 255, then the value of n is

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

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

Q175 TS EAMCET 2022 · 20 Jul · Shift 1 MCQ

Let $a, b, c \in \mathbb{N}$ and $a+b+c=5$. Let L, M be the least and greatest values of $2^a 3^b 5^c$ respectively. Then $M-L=$

(A) $2 \cdot 3^2 \cdot 5 \cdot 7$
(B) $2^2 \cdot 3 \cdot 5 \cdot 7$
(C) $2 \cdot 3^2 \cdot 5^2 \cdot 7^0$
(D) $2^0 \cdot 3 \cdot 5^3 \cdot 7^0$

Answer: (A) $2 \cdot 3^2 \cdot 5 \cdot 7$ · The council's preliminary key

Q176 TS EAMCET 2022 · 20 Jul · Shift 1 MCQ

The number of positive divisors of 360 which are multiples of 3 is

(A) 16
(B) 15
(C) 24
(D) 23

Answer: (A) 16 · The council's preliminary key

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Q177 TS EAMCET 2022 · 20 Jul · Shift 2 MCQ

If ${}^{m}P_r - {}^{(m-1)}P_r = a \cdot {}^{(m-1)}P_s$, then $a - s =$

(A) 1
(B) 0
(C) $m - 1$
(D) $m - r$

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

Q178 TS EAMCET 2022 · 20 Jul · Shift 2 MCQ

The total number of ways of selecting 4 letters from all the letters of the word TSEAMCET is

(A) 12
(B) 13
(C) 26
(D) 36

Answer: (D) 36 · The council's preliminary key

Q179 TS EAMCET 2022 · 19 Jul · Shift 1 MCQ

Let $\mathbb{N}$ be the set of positive integers. The number of distinct triplets (x, y, z) satisfying $x, y, z \in \mathbb{N}$, $x < y < z$ and $x + y + z = 12$ is

(A) 5
(B) 7
(C) 6
(D) 8

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

Q180 TS EAMCET 2022 · 19 Jul · Shift 1 MCQ

A question paper has 3 parts and each part contains 4 questions. The number of different ways in which a candidate can answer 8 questions choosing at least two from each part is

(A) 396
(B) 204
(C) 224
(D) 132

Answer: (A) 396 · The council's preliminary key

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Q181 TS EAMCET 2022 · 19 Jul · Shift 2 MCQ

The number of ways of arranging the letters of the word LINEAR so that the letters N and R do not come together and E and A come together is

(A) 80
(B) 60
(C) 10
(D) 144

Answer: (D) 144 · The council's preliminary key

Q182 TS EAMCET 2022 · 19 Jul · Shift 2 MCQ

15 lines are concurrent at a point P. A line L not passing through P intersects all the 15 lines and forms triangles with them. Then the number of triangles having L as one of its side is

(A) 310
(B) 91
(C) 182
(D) 105

Answer: (D) 105 · The council's preliminary key

Q183 TS EAMCET 2022 · 18 Jul · Shift 1 MCQ

The number of 3-digit odd numbers divisible by 3 that can be formed using the digits 1, 2, 3, 4, 5, 6 when repetition is not allowed is

(A) 18
(B) 21
(C) 24
(D) 36

Answer: (C) 24 · The council's preliminary key

Q184 TS EAMCET 2022 · 18 Jul · Shift 1 MCQ

Match the items of List -I to the items of List -II
List - I
A) The number of ways of not selecting $(n-r)$ things from n different things
B) $(n-r+1)\cdot {}^{n}\mathrm{C}_{r-1}$
C) The number of ways of selecting atleast $(n-r)$ things from n different things
D) $(n-r)\left({}^{(n-1)}\mathrm{C}_{r-1}+{}^{(n-1)}\mathrm{C}_{r}\right)$
List - II
I) $1+n+{}^{n}\mathrm{C}_{2}+\cdots+{}^{n}\mathrm{C}_{r}$
II) $(r+1)\cdot {}^{n}\mathrm{C}_{r+1}$

III) $r \cdot {}^{n}\mathrm{C}_{r}$
IV) $2^{n} - 1 - n - {}^{n}\mathrm{C}_{2} - \cdots - {}^{n}\mathrm{C}_{r}$
V) ${}^{n}\mathrm{C}_{n-r}$
The correct match is:

(A) A: V, B: III, C: IV, D: II
(B) A: I, B: II, C: IV, D: III
(C) A: V, B: III, C: I, D: II
(D) A: I, B: V, C: IV, D: III

Answer: (C) A: V, B: III, C: I, D: II · The council's preliminary key

Q185 TS EAMCET 2022 · 18 Jul · Shift 2 MCQ

a, b, c are three particular speakers among the 10 speakers of a meeting. The number of ways of arranging all the 10 speakers on the dias in a row so that all the three speakers a, b, c do not sit together is

(A) $714\ (7!)$
(B) $89\ (8!)$
(C) $719\ (7!)$
(D) $84\ (8!)$

Answer: (D) $84\ (8!)$ · The council's preliminary key

Q186 TS EAMCET 2022 · 18 Jul · Shift 2 MCQ

The exponent of 6 in 72! is

(A) 34
(B) 70
(C) 17
(D) 35

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

Q187 AP EAPCET 2022 · 8 Jul · Shift 1 MCQ

What is the rank of the word "MOTHER" when all possible words are formed using all its letters and arranged as in a dictionary?

(A) 308
(B) 309
(C) 291
(D) 307

Answer: (B) 309 · The council's preliminary key

Q188 AP EAPCET 2022 · 8 Jul · Shift 1 MCQ

The number of 5 card combinations out of a deck of 52 cards if there is exactly one ace in each combination is

(A) 823764
(B) 363428
(C) 778320
(D) 542380

Answer: (C) 778320 · The council's preliminary key

Q189 AP EAPCET 2022 · 8 Jul · Shift 1 MCQ

If ${}^{10}P_r = 604800$ and ${}^{10}C_r = 120$ then $r =$

(A) 14
(B) 7
(C) 8
(D) 16

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

Q190 AP EAPCET 2022 · 8 Jul · Shift 1 MCQ

A question paper consists of two sections having 3 and 4 questions respectively. The following note is given on the paper "It is not necessary to attempt all the questions. One question from each section is compulsory". In how many ways can a candidate select the questions?

(A) 105
(B) 210
(C) 2^7
(D) 2^5

Answer: (A) 105 · The council's preliminary key

Q191 AP EAPCET 2022 · 8 Jul · Shift 2 MCQ

If ${}^{n-3}C_r + B\,{}^{n-3}C_{r-1} + B^1\,{}^{n-3}C_{r-2} + {}^{n-3}C_{r-3} = {}^{n}C_r$ holds for all $n \geq r \geq 3$, then $(B, B^1) =$

(A) $(1, 5)$
(B) $(5, 1)$
(C) $(3, 3)$
(D) $(4, 2)$

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

Q192 AP EAPCET 2022 · 8 Jul · Shift 2 MCQ

A student is to answer 10 out of 13 questions in an examination such that he must choose at least 4 from the first five questions. The number of choices available to him is

(A) 196
(B) 140
(C) 168
(D) 176

Answer: (A) 196 · The council's preliminary key

Q193 AP EAPCET 2022 · 8 Jul · Shift 2 MCQ

The number of ways of dividing 200 dissimilar things into 10 groups each containing 20 elements is

(A) $(200)!/(201)^{20}\cdot 10!$
(B) $(200)!/(10!)^{10}\cdot 20!$
(C) $(200)!/(20!)^{10}\cdot 10!$
(D) $(200)!/(10!)^{20}\cdot 20!$

Answer: (C) $(200)!/(20!)^{10}\cdot 10!$ · The council's preliminary key

Q194 AP EAPCET 2022 · 8 Jul · Shift 2 MCQ

In how many different ways can three persons A,B,C having 6,7 and 8 one rupee coins respectively, donate Rs.10 collectively?

(A) 47
(B) 66
(C) 56
(D) 60

Answer: (A) 47 · The council's preliminary key

Q195 AP EAPCET 2022 · 7 Jul · Shift 1 MCQ

If ${}^nC_{r-1}=36$, ${}^nC_r=84$ and ${}^nC_{r+1}=126$ then the value of nr^2 is

(A) 243
(B) 9
(C) 27
(D) 81

Answer: (D) 81 · The council's preliminary key

Q196 AP EAPCET 2022 · 7 Jul · Shift 1 MCQ

The total number of positive integral solutions (x,y,z) of $xyz=24$ is

(A) 24
(B) 30
(C) 36
(D) 32

Answer: (B) 30 · The council's preliminary key

Q197 AP EAPCET 2022 · 7 Jul · Shift 1 MCQ

Let $P_1, P_2, \ldots, P_{15}$ be 15 points on a circle. The number of distinct triangles formed by points P_i, P_j, P_k such that $i + j + k \neq 15$, is

(A) 449
(B) 419
(C) 455
(D) 443

Answer: (D) 443 · The council's preliminary key

Q198 AP EAPCET 2022 · 7 Jul · Shift 2 MCQ

The English alphabets have 5 vowels and 21 consonants. How many words with two different vowels and two different consonants can be formed from the alphabet?

(A) $2100 \times 2!$
(B) $210 \times 2!$
(C) $210 \times 4!$
(D) $2100 \times 4!$

Answer: (D) $2100 \times 4!$ · The council's preliminary key

Q199 AP EAPCET 2022 · 7 Jul · Shift 2 MCQ

In a plane there are 37 straight lines of which 13 pass through point A and 11 pass through the point B. Moreover, no three lines (apart from the lines passing through A and B) pass through same point and no two are parallel. What is the number of points of intersection of the straight lines?

(A) ${}^{37}C_2$
(B) ${}^{37}C_2 - {}^{13}C_2 - {}^{11}C_2$
(C) ${}^{37}C_2 - {}^{13}C_2 - {}^{11}C_2 + 2$
(D) ${}^{37}C_2 - 2$

Answer: (C) ${}^{37}C_2 - {}^{13}C_2 - {}^{11}C_2 + 2$ · The council's preliminary key

Q200 AP EAPCET 2022 · 7 Jul · Shift 2 MCQ

The sum of all possible numbers that can be formed by using the digits 2,3,5,7 without repetition of digits is

(A) $17 \times \frac{10^4-1}{9}$

(B) $33 \times 34 \times 101$

(C) $6 \times \frac{10^3-1}{9}$

(D) $33 \times 35 \times 1001$

Answer: (B) $33 \times 34 \times 101$ · The council's preliminary key

Q201 AP EAPCET 2022 · 7 Jul · Shift 2 MCQ

If ${}^{n}P_r = {}^{(n-1)}P_r + x \cdot {}^{(n-1)}P_{(r-1)}\ \forall\, n, r \in N$ and $r \leq n$, then $x =$

(A) (n+1)

(B) (r+1)

(C) n

(D) r

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

Q202 AP EAPCET 2022 · 6 Jul · Shift 1 MCQ

The value of ${}^{34}C_5 + \sum_{i=0}^{4}(38-i)\,C_4$ is

(A) ${}^{39}C_4$

(B) ${}^{39}C_5$

(C) ${}^{38}C_5$

(D) ${}^{38}C_4$

Answer: (B) ${}^{39}C_5$ · The council's preliminary key

Q203 AP EAPCET 2022 · 6 Jul · Shift 1 MCQ

Number of four digit numbers that can be formed using all the digits except zero such that every number has exactly 2 distinct digits in it is

(A) 189

(B) 216

(C) 288

(D) 504

Answer: (D) 504 · The council's preliminary key

Q204 AP EAPCET 2022 · 6 Jul · Shift 1 MCQ

How many words, with or without meaning, each of 2 vowels and 3 consonants can be formed from the letters of the word DAUGHTER?

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(A) 120
(B) 21600
(C) 720
(D) 3600

Answer: (D) 3600 · The council's preliminary key

Q205 AP EAPCET 2022 · 6 Jul · Shift 1 MCQ

The number of ways of distributing 500 dissimilar boxes equally among '50' persons is

(A) $500! / (10!)^{50}. 50!$
(B) $500! / (50!)^{10}. 10!$
(C) $500! / (50!)^{10}$
(D) $500! / (10!)^{50}$

Answer: (D) $500! / (10!)^{50}$ · The council's preliminary key

Q206 AP EAPCET 2022 · 6 Jul · Shift 2 MCQ

In how many ways can the letters of the word "ASSASSINATION" can be arranged so that all S's are together?

(A) $10!$
(B) $10!/3!2!2!$
(C) $9!/3!2!2!$
(D) $9!$

Answer: (B) $10!/3!2!2!$ · The council's preliminary key

Q207 AP EAPCET 2022 · 6 Jul · Shift 2 MCQ

Let T_n be the number of all possible triangles formed by joining vertices of an n-sided regular polygon. If $T_{n+1} - T_n = 10$, then the value of n is:

(A) 5
(B) 3
(C) 7
(D) 4

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

Q208 AP EAPCET 2022 · 6 Jul · Shift 2 MCQ

The number of numbers between 2000 and 5000 that can be formed with the digits 0,1,2,3,4 (repetition of digits not allowed) and are multiple of 3 is:

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(A) 48
(B) 30
(C) 24
(D) 32

Answer: (B) 30 · The council's preliminary key

Q209 AP EAPCET 2022 · 6 Jul · Shift 2 MCQ

How many numbers between 10 and 10,000 can be formed by using the digits 1,2,3,4,5, if no digit is repeated in any number?

(A) 200
(B) 775
(C) 60
(D) 120

Answer: (A) 200 · The council's preliminary key

Q210 AP EAPCET 2022 · 5 Jul · Shift 1 MCQ

If $10\,{}^{n}C_{2} = 3\,{}^{n+1}C_{3}$, then the value of n is

(A) 3
(B) 10
(C) 7
(D) 9

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

Q211 AP EAPCET 2022 · 5 Jul · Shift 1 MCQ

There are 10 points in a plane, out of these 6 are collinear. If N is the total number of triangles formed by joining these points, then N =

(A) 120
(B) 850
(C) 100
(D) 150

Answer: (C) 100 · The council's preliminary key

Q212 AP EAPCET 2022 · 5 Jul · Shift 1 MCQ

In an examination, the maximum marks for each of three subjects is n and that for the fourth subject is 2n. The number of ways in which candidates can get 3n marks is

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(A) $\frac{1}{6}(n+1)^2(5n^2+10n+6)^2$
(B) $\frac{1}{6}(n+1)(5n^2+10n+6)^2$
(C) $\frac{1}{6}(n+1)^2(5n^2+10n+6)$
(D) $\frac{1}{6}(n+1)(5n^2+10n+6)$

Answer: (D) $\frac{1}{6}(n+1)(5n^2+10n+6)$ · The council's preliminary key

Q213 AP EAPCET 2022 · 5 Jul · Shift 2 MCQ

Given 5 different green toys, 4 different blue toys, and 3 different red toys, how many combinations of toys can be chosen taking at least one green and one blue toy?

(A) $32 \times 16 \times 4$
(B) $31 \times 15 \times 4$
(C) $32 \times 16 \times 8$
(D) $31 \times 15 \times 8$

Answer: (D) $31 \times 15 \times 8$ · The council's preliminary key

Q214 AP EAPCET 2022 · 5 Jul · Shift 2 MCQ

If ${}^{2n}C_3 : {}^{n}C_3 = 12 : 1$, then $n =$

(A) 5
(B) 8
(C) 10
(D) 3

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

Q215 AP EAPCET 2022 · 5 Jul · Shift 2 MCQ

There are 4 oranges, 5 apples, 7 mangoes in a fruit basket. The number of ways of selecting at least one fruit from among the fruits in the basket is

(A) 210
(B) 240
(C) 209
(D) 239

Answer: (D) 239 · The council's preliminary key

Q216 AP EAPCET 2022 · 5 Jul · Shift 2 MCQ

If ${}^{9}C_3 + {}^{9}C_5 = {}^{10}C_r$ for some $r \in \mathbf{N}$, then $r =$

(A) 3
(B) 4
(C) 5
(D) 7

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

Q217 AP EAPCET 2022 · 4 Jul · Shift 1 MCQ

The total number of permutations of n different things taken not more than r at a time, when each thing may be repeated any number of times is

(A) $\frac{n(n^{r+1}-1)}{n-1}$
(B) $\frac{n^{r+1}-1}{n-1}$
(C) $\frac{n(n^{r}-1)}{n-1}$
(D) $\frac{(n^{r}-1)}{n-1}$

Answer: (C) $\frac{n(n^{r}-1)}{n-1}$ · The council's preliminary key

Q218 AP EAPCET 2022 · 4 Jul · Shift 1 MCQ

How many chords can be drawn through 21 points on a circle?

(A) 105
(B) 210
(C) 420
(D) 840

Answer: (B) 210 · The council's preliminary key

Q219 AP EAPCET 2022 · 4 Jul · Shift 1 MCQ

If a polygon of n sides has 560 diagonals then n =

(A) 35
(B) 36
(C) 37
(D) 38

Answer: (A) 35 · The council's preliminary key

Q220 AP EAPCET 2022 · 4 Jul · Shift 1 MCQ

A person writes letters to 6 friends and addresses the corresponding envelopes. In how many ways can the letters be placed in the envelopes so that at least two of them are in the wrong envelopes?

Notation : $D_n = n!\left(\sum_{i=0}^{n}\frac{(-1)^i}{i!}\right)$

(A) ${}^6C_4 \cdot D_2$

(B) $\sum_{r=3}^{6} {}^6C_{6-r} \cdot D_r$

(C) $\sum_{r=2}^{6} {}^6C_{6-r} \cdot D_r$

(D) ${}^6C_1 D_5 + {}^6C_0 \cdot D_6$

Answer: (C) $\sum_{r=2}^{6} {}^6C_{6-r} \cdot D_r$ · The council's preliminary key

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Q221 AP EAPCET 2022 · 4 Jul · Shift 2 MCQ

In how many ways can the letters of the word "MULTIPLE" be arranged keeping the position of the vowels fixed?

(A) 60

(B) 360

(C) 600

(D) 300

Answer: (A) 60 · Checked by our team

Q222 AP EAPCET 2022 · 4 Jul · Shift 2 MCQ

The least value of n so that ${}^{(n-1)}C_3 + {}^{(n-1)}C_4 > {}^nC_3$

(A) 11

(B) 9

(C) 8

(D) 7

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

Q223 AP EAPCET 2022 · 4 Jul · Shift 2 MCQ

A natural number n such that n! ends in exactly 1000 zeros is

(A) 4010

(B) 4000

(C) 4009

(D) 4004

Answer: (C) 4009 · The council's preliminary key

Q224 AP EAPCET 2021 · 5 Oct · Shift 1 MCQ

The value of ${}^{15}C_8 + {}^{15}C_9 - {}^{15}C_6 - {}^{15}C_7$

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

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

Q225 AP EAPCET 2021 · 5 Oct · Shift 1 MCQ

How many four-digit numbers $abcd$ exist such that a is odd, b is divisible by 3, c is even and d is prime?

(A) 380
(B) 360
(C) 400
(D) 480

Answer: (C) 400 · The council's preliminary key

Q226 AP EAPCET 2021 · 5 Oct · Shift 1 MCQ

In how many ways can 3 Americans, 4 Frenchmen's, 4 Indians and 2 Italians be seated in a round table so that those of the same nationality sit together?

(A) 165,888
(B) 41,472
(C) 6912
(D) 2^{13}

Answer: (B) 41,472 · The council's preliminary key

Q227 AP EAPCET 2021 · 25 Aug · Shift 1 MCQ

The value of ${}^7P_3 - 3({}^6P_2)$ is equal to

(A) ${}^7P_2$
(B) 60
(C) ${}^6P_3$
(D) 240

Answer: (C) ${}^6P_3$ · The council's preliminary key

Q228 AP EAPCET 2021 · 25 Aug · Shift 1 MCQ

The number of ways in which 'n' distinct objects can be put into two different boxes is

(A) ${}^{n}P_{2}$

(B) 2^{n}

(C) ${}^{n}C_{2}$

(D) $n(n-1)(n-2)$

Answer: (B) 2^{n} · The council's preliminary key

Q229 AP EAPCET 2021 · 25 Aug · Shift 1 MCQ

A student has to answer 10 out of 13 questions in an examination. The number of ways in which he can answer if he must answer atleast 3 of the first five questions is _____

(A) 376

(B) 276

(C) 286

(D) 386

Answer: (B) 276 · The council's preliminary key

Q230 AP EAPCET 2021 · 25 Aug · Shift 2 MCQ

In an examination, a student has to write exams in 8 different subjects. He is declared fail if he fails in at least one subject. The number of ways in which he can fail is _____

(A) 127

(B) 256

(C) 255

(D) 7

Answer: (C) 255 · The council's preliminary key

Q231 AP EAPCET 2021 · 25 Aug · Shift 2 MCQ

If $8 \cdot {}^{7}P_{r} = 7 \cdot {}^{8}P_{r-1}$, what is the value of 'r'?

(A) 3 & 4

(B) 2 & 5

(C) 4 & 5

(D) No solution (No such 'r' exists)

Answer: (D) No solution (No such 'r' exists) · The council's preliminary key

Q232 AP EAPCET 2021 · 25 Aug · Shift 2 MCQ

7 relatives of a man comprises 4 ladies and 3 gentlemen. His wife also has 7 relatives - 3 of them are ladies and 4 are gentlemen. In how many ways can they invite a dinner party of 3 ladies and 3 gentlemen so that there are 3 of man's relative and 3 of wife's relative?

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(A) 485
(B) 500
(C) 486
(D) 102

Answer: (A) 485 · The council's preliminary key

Q233 AP EAPCET 2021 · 24 Aug · Shift 1 MCQ

Statement I: The number of ways of distributing 10 identical balls in 4 distinct boxes such that no box is empty is ${}^{9}C_{3}$
Statement II: The number of ways of choosing 3 places from 9 different places is ${}^{9}C_{3}$

(A) Statement I is true, statement II is true; statement II is not a correct explanation for statement I
(B) Statement I is true, statement II is false
(C) Statement I is false, statement II is true
(D) Statement I is true, statement II is true; statement II is a correct explanation for statement I

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

Q234 AP EAPCET 2021 · 24 Aug · Shift 1 MCQ

The solution set of ${}^{5}C_{x-1} > 2 \cdot ({}^{5}C_{x})$ is

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

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

Q235 AP EAPCET 2021 · 24 Aug · Shift 2 MCQ

The value of $\sum_{r=0}^{4} {}^{(19-r)}C_{3} + {}^{15}C_{4}$ is equal to

(A) ${}^{21}C_{4}$
(B) ${}^{19}C_{4}$
(C) ${}^{20}C_{4}$
(D) ${}^{16}C_{4}$

Answer: (C) ${}^{20}C_{4}$ · The council's preliminary key

Q236 AP EAPCET 2021 · 24 Aug · Shift 2 MCQ

The number of integers from 1 to 100 which are divisible by 2 or 3 is

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(A) 88
(B) 67
(C) 58
(D) 47

Answer: (B) 67 · The council's preliminary key

Q237 AP EAPCET 2021 · 24 Aug · Shift 2 MCQ

There are 10 points on the line AB excluding A and B and 8 points on AC excluding A & C. Number of triangles formed with these points not considering A, B, C is

(A) ${}^{18}C_3 - {}^{10}C_3$
(B) 360
(C) 640
(D) 280

Answer: (C) 640 · The council's preliminary key

Q238 AP EAPCET 2021 · 23 Aug · Shift 1 MCQ

The number of ways in which 6 men and 5 women can dine at a round table, if no two women are to sit together is

(A) $6! \times 5!$
(B) 30
(C) $5! \times 4!$
(D) $7! \times 5!$

Answer: (A) $6! \times 5!$ · The council's preliminary key

Q239 AP EAPCET 2021 · 23 Aug · Shift 1 MCQ

In how many ways can the letters of the word $MAXIMA$ be arranged such that all vowels are together and all constants (sic) are together?

(A) 18
(B) 30
(C) 36
(D) 42

Answer: (A) 18 · The council's preliminary key

Q240 AP EAPCET 2021 · 23 Aug · Shift 2 MCQ

The number of words which can be made out of the letters of the word 'MOBILE' when consonants occupy odd places is

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(A) 20
(B) 36
(C) 30
(D) 720

Answer: (B) 36 · The council's preliminary key

Q241 AP EAPCET 2021 · 23 Aug · Shift 2 MCQ

The number of distinct positive integers can be formed using 0, 1, 2, 3 where each integer used at most once is equal to

(A) 84
(B) 64
(C) 48
(D) 36

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

Q242 AP EAPCET 2021 · 23 Aug · Shift 2 MCQ

A set of 10 parallel lines is intersected by another set of m parallel lines. If the total number of parallelograms formed by these two sets of lines is 675. Then $m =$

(A) 15
(B) 10
(C) 12
(D) 6

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

Q243 AP EAPCET 2021 · 20 Aug · Shift 1 MCQ

The value of ${}^6P_4 + 4 \cdot {}^6P_3$ is _____

(A) 5040
(B) 2520
(C) 840
(D) 720

Answer: (C) 840 · The council's preliminary key

Q244 AP EAPCET 2021 · 20 Aug · Shift 1 MCQ

The number of ways in which 3 boys and 2 girls can sit on a bench so that no two boys are adjacent is _____

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(A) 6
(B) 10
(C) 12
(D) 32

Answer: (C) 12 · The council's preliminary key

Q245 AP EAPCET 2021 · 20 Aug · Shift 1 MCQ

In how many ways can 5 balls be placed in 4 tins if any number of balls can be placed in any tin?

(A) ${}^5P_4$
(B) ${}^5C_4$
(C) 4^5
(D) 5^4

Answer: (C) 4^5 · The council's preliminary key

Q246 AP EAPCET 2021 · 20 Aug · Shift 2 MCQ

A set contains 11 elements. The number of subsets of the set which contain at most 5 elements is

(A) ${}^{12}C_0 + {}^{12}C_2 + {}^{12}C_4$
(B) ${}^{12}C_1 + {}^{12}C_3 + {}^{12}C_5$
(C) ${}^{11}C_0 + {}^{11}C_1 + {}^{11}C_2 + {}^{11}C_4$
(D) ${}^{11}C_0 + {}^{11}C_1 + {}^{11}C_2 + {}^{11}C_3$

Answer: (B) ${}^{12}C_1 + {}^{12}C_3 + {}^{12}C_5$ · The council's preliminary key

Q247 AP EAPCET 2021 · 19 Aug · Shift 1 MCQ

If a person has 3 coins of different denominations, the number of different sums can be formed is

(A) 3
(B) 7
(C) 8
(D) 3!

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

Q248 AP EAPCET 2021 · 19 Aug · Shift 1 MCQ

There are 7 identical white balls and 3 identical black balls. The number of distinguishable arrangements in a row of all the balls, so that no two black balls are adjacent is _____

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(A) 120
(B) $89.(8!)$
(C) 56
(D) 42×5^4

Answer: (C) 56 · The council's preliminary key

Q249 AP EAPCET 2021 · 19 Aug · Shift 1 MCQ

The number of ways of distributing eight identical rings to three different girls so that every girl gets at least one ring is

(A) 21
(B) 120
(C) ${}^8P_3$
(D) ${}^8P_3 - 6$

Answer: (A) 21 · The council's preliminary key

Q250 AP EAPCET 2021 · 19 Aug · Shift 2 MCQ

For $1 \leq r \leq n$, $\frac{1}{r+1}\left\{{}^nP_{r+1} - {}^{(n-1)}P_{r+1}\right\}$ is equal to

(A) ${}^nP_n$
(B) ${}^{n-1}P_r$
(C) ${}^nP_{n+1}$
(D) 0

Answer: (B) ${}^{n-1}P_r$ · The council's preliminary key

Q251 AP EAPCET 2021 · 19 Aug · Shift 2 MCQ

In how many ways 4 balls can be picked from 6 black and 4 green colored balls such that at least one black ball is selected?

(A) 212
(B) 210
(C) 209
(D) 15

Answer: (C) 209 · The council's preliminary key

Q252 AP EAPCET 2021 · 19 Aug · Shift 2 MCQ

In how many ways can 9 examination papers be arranged so that the best and the worst papers are never together?

(A) $9! - 2! \times 7!$
(B) $9! - 2! \times 8!$
(C) $9! - 8!$
(D) $9! - 7!$

Answer: (B) $9! - 2! \times 8!$ · The council's preliminary key

Q253 TS EAMCET 2021 · 6 Aug · Shift 1 MCQ

By using the non-zero digits, the number of 5 digit numbers that can be formed so that each number has largest digit in its middle place and the digits in the number are different is

(A) $\sum_{r=4}^{9} {}^{r}P_4$
(B) $\sum_{r=4}^{8} {}^{r}P_4 - \sum_{r=4}^{8} {}^{r}P_3$
(C) $\sum_{r=4}^{8} {}^{r}P_3$
(D) $\sum_{r=4}^{8} {}^{r}P_4$

Answer: (D) $\sum_{r=4}^{8} {}^{r}P_4$ · The council's preliminary key

Q254 TS EAMCET 2021 · 6 Aug · Shift 1 MCQ

T_m denotes the number of triangles that can be formed with the vertices of a regular polygon of m sides. If $T_{m+1} - T_m = 15$, then $m =$

(A) 3
(B) 6
(C) 9
(D) 12

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

Q255 TS EAMCET 2021 · 6 Aug · Shift 2 MCQ

Seven scientists $S_1, S_2, \ldots, S_7$ are invited to deliver one lecture each in a conference. The number of ways all the seven lectures can be arranged such that the lecture of S_1 is prior to that of S_3 and the lecture of S_3 is prior to that of S_7 is

(A) 35
(B) 840
(C) 720
(D) 210

Answer: (B) 840 · The council's preliminary key

Q256 TS EAMCET 2021 · 6 Aug · Shift 2 MCQ

15 girls are seated at a round table. The number of ways of selecting three girls such that all the three are not seated together is

(A) 450
(B) 345
(C) 390
(D) 440

Answer: (D) 440 · The council's preliminary key

Q257 TS EAMCET 2021 · 5 Aug · Shift 1 MCQ

If $0 < r < s < n$ and ${}^{n}P_{r} = {}^{n}P_{s}$, then $r + s =$

(A) $2n - 2$
(B) $2n - 1$
(C) 2
(D) 1

Answer: (B) $2n - 1$ · The council's preliminary key

Q258 TS EAMCET 2021 · 5 Aug · Shift 1 MCQ

Three and four digit numbers are formed from the digits 1, 3, 5, 6, 8. If e_1 is number of three digit even numbers with no digit repeated and e_2 is number of four digit even numbers with no digit repeated. Also O_1 represent the number of three digit odd numbers in which no digit is repeated and O_2 represent the number of four digit odd numbers in which no digit is repeated. Then

(A) $e_1 = O_1,\ e_2 = O_2$
(B) $e_1 + e_2 + O_1 + O_2 = {}^{5}P_3 + 5^3$
(C) $\frac{e_1 + e_2}{2} = \frac{O_1 + O_2}{3} = 6^2$
(D) $\frac{e_1 + e_2}{O_1 + O_2} = \frac{3}{2}$

Answer: (C) $\frac{e_1 + e_2}{2} = \frac{O_1 + O_2}{3} = 6^2$ · The council's preliminary key

Q259 TS EAMCET 2021 · 5 Aug · Shift 2 MCQ

If $x = {}^{16}C_5 + {}^{12}C_4$, $y = \sum_{r=1}^{3} {}^{(20-r)}C_4$, $z = \sum_{k=1}^{4} {}^{(16-k)}C_3$, then $x + y + z =$

(A) $19 \times 17 \times 45$
(B) $19 \times 17 \times 15$
(C) $19 \times 17 \times 16$
(D) $19 \times 17 \times 48$

Answer: (D) $19 \times 17 \times 48$ · The council's preliminary key

Q260 TS EAMCET 2021 · 5 Aug · Shift 2 MCQ

The number of five digit numbers greater than 50000 that can be formed by using all the digits 0, 1, 3, 5, 9 only once is

(A) 24
(B) 48
(C) 150
(D) 30

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

Q261 TS EAMCET 2021 · 4 Aug · Shift 1 MCQ

$^{34}C_5 + \sum_{r=0}^{4} {}^{(38-r)}C_4 =$

(A) $22 \times {}^{39}C_4$
(B) ${}^{39}C_4$
(C) $3 \times {}^{39}C_5$
(D) ${}^{39}C_5$

Answer: (D) ${}^{39}C_5$ · The council's preliminary key

Q262 TS EAMCET 2021 · 4 Aug · Shift 1 MCQ

If $^{22}P_{r+1} : {}^{20}P_{r+2} = 11 : 52$ then $r =$

(A) 3
(B) 5
(C) 7
(D) 9

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

Q263 TS EAMCET 2021 · 4 Aug · Shift 2 MCQ

If there are 5 letters written to 5 different people and 5 envelopes addressed to them, then the number of ways in which these letters can be arranged so that no letter goes into its corresponding envelope is

(A) 9
(B) 24
(C) 44
(D) 119

Answer: (C) 44 · The council's preliminary key

Q264 TS EAMCET 2021 · 4 Aug · Shift 2 MCQ

The number of ways of selecting a committee of 30 persons from 20 boys, 20 girls and 20 teachers such that the participation of number of boys, girls and teachers in that committee is equal, is

(A) $(20!)(20!)(20!)$
(B) ${}^{60}C_{30}$
(C) $\frac{(20!)^3}{(10!)^6}$
(D) $\frac{(20!)(20!)}{10!\,10!}$

Answer: (C) $\frac{(20!)^3}{(10!)^6}$ · The council's preliminary key

Q265 AP EAMCET 2020 · 7 Oct · Shift 1 MCQ

In how many ways can you arrange the letters of the word "ATTAIN" so that the T's are together?

(A) 120
(B) 240
(C) 60
(D) 24

Answer: (C) 60 · The council's preliminary key

Q266 AP EAMCET 2020 · 7 Oct · Shift 1 MCQ

Ten points are marked on a circle. Number of distinct convex polygons of three or more sides can be drawn using some or all of the ten points as vertices is _____

(A) 978
(B) 1013
(C) 968
(D) 999

Answer: (C) 968 · The council's preliminary key

Q267 AP EAMCET 2020 · 7 Oct · Shift 1 MCQ

Let $X = \{(a, b) \mid a, b \in \mathbf{Z},\ 0 \le a \le 20,\ 0 \le b \le 15\}$. Then the number of rectangles with vertices in set X is _____

(A) 25100
(B) 25200
(C) 25300
(D) 25000

Answer: (B) 25200 · The council's preliminary key

Q268 AP EAMCET 2020 · 23 Sep · Shift 1 MCQ

The number of ways of choosing a committee from four men and six women so that the committee includes atleast two men and exactly twice as many women as men is

(A) 90
(B) 92
(C) 94
(D) 96

Answer: (C) 94 · The council's preliminary key

Q269 AP EAMCET 2020 · 23 Sep · Shift 1 MCQ

From 5 consonants and 5 vowels, how many words can be formed using 3 consonants and 2 vowels?

(A) 12000
(B) 2000
(C) 20000
(D) 1200

Answer: (A) 12000 · The council's preliminary key

Q270 AP EAMCET 2020 · 23 Sep · Shift 1 MCQ

Find the number of marked points on the plane, if when connected pairwise by line segments, the total number of line segments formed is 15.

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

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

Q271 AP EAMCET 2020 · 23 Sep · Shift 1 MCQ

For which value of $n \in N$, $n!$ has 13 trailing zeros?

(A) 51
(B) 54
(C) 57
(D) 60

Answer: (C) 57 · The council's preliminary key

Q272 AP EAMCET 2020 · 22 Sep · Shift 1 MCQ

If ${}^{n}C_{7} = {}^{n}C_{6}$, then ${}^{n}C_{2} =$

(A) 858
(B) 13
(C) 1
(D) 78

Answer: (D) 78 · The council's preliminary key

Q273 AP EAMCET 2020 · 22 Sep · Shift 1 MCQ

Find the number of ways of arranging 6 red balls and 6 black balls in a row such that no two black balls are together.

(A) $6! \times 6!$
(B) $7! \times 6!$
(C) $2 \times 6! \times 6!$
(D) $7 \times 6! \times 6!$

Options (2) or (4) were accepted. More than one answer was accepted. · The council's preliminary key

Q274 AP EAMCET 2020 · 22 Sep · Shift 2 MCQ

The ten's digit in $1! + 4! + 7! + 10! + 12! + 13! + 15! + 16! + 17!$ is divisible by _____

(A) $4!$
(B) $3!$
(C) 5
(D) 7

Answer: (B) $3!$ · The council's preliminary key

Q275 AP EAMCET 2020 · 22 Sep · Shift 2 MCQ

If ${}^{12}C_{2k-1} = {}^{12}C_{k+1}$, then find k

(A) 3
(B) 6
(C) 9
(D) 4

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

Q276 AP EAMCET 2020 · 22 Sep · Shift 2 MCQ

A regular polygon has 170 diagonals. Then the measure of interior angle of the polygon is

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(A) $\frac{5\pi}{8}$
(B) $\frac{9\pi}{10}$
(C) $\frac{7\pi}{10}$
(D) $\frac{17\pi}{20}$

Answer: (B) $\frac{9\pi}{10}$ · The council's preliminary key

Q277 AP EAMCET 2020 · 21 Sep · Shift 1 MCQ

All the words that can be formed using alphabets A, H, L, U, R are written as in dictionary (no alphabet is repeated). Then the rank of the word $RAHUL$ is _____

(A) 70
(B) 71
(C) 73
(D) 74

Answer: (D) 74 · The council's preliminary key

Q278 AP EAMCET 2020 · 21 Sep · Shift 1 MCQ

If ${}^{n}P_{4} = 1680$, then $n =$

(A) 6
(B) 12
(C) 10
(D) 8

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

Q279 AP EAMCET 2020 · 21 Sep · Shift 1 MCQ

If $\frac{{}^{n+1}C_{r+1}}{{}^{n+1}C_{r}} = \frac{n-r+1}{m}$, then $m =$

(A) r
(B) $r-1$
(C) $r+1$
(D) $1-r$

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

Q280 AP EAMCET 2020 · 21 Sep · Shift 1 MCQ

If ${}^{n}C_{r}$ denotes the number of combinations of 'n' things taken 'r' at a time, then the expression ${}^{n}C_{r+1} + {}^{n}C_{r-1} + 2\,{}^{n}C_{r}$ equals

(A) $^{n+2}C_r$
(B) $^{n+2}C_{r+1}$
(C) $^{n+1}C_r$
(D) $^{n+1}C_{r+1}$

Answer: (B) $^{n+2}C_{r+1}$ · The council's preliminary key

Q281 AP EAMCET 2020 · 21 Sep · Shift 2 MCQ

If the number of rectangles formed on a chess board is 1296, then the total number of squares formed on the chess board is

(A) 202
(B) 203
(C) 204
(D) 205

Answer: (C) 204 · The council's preliminary key

Q282 AP EAMCET 2020 · 21 Sep · Shift 2 MCQ

A number lock has 3 rings and each ring has 8 digits. Total number of different ways in which 3 rings can be rotated is

(A) 3^8
(B) 8^3
(C) 3×8
(D) $^8P_3$

Answer: (B) 8^3 · The council's preliminary key

Q283 AP EAMCET 2020 · 21 Sep · Shift 2 MCQ

In how many ways a committee of 6 members can be formed out of 10 members but always consisting of a specified member?

(A) $\frac{1}{2}\,^9P_5$
(B) $^9P_5$
(C) $^9C_5$
(D) $\frac{1}{2}\,^9C_5$

Answer: (C) $^9C_5$ · The council's preliminary key

Q284 AP EAMCET 2020 · 18 Sep · Shift 1 MCQ

The number of different words that can be formed from the letters of the word "INTERMEDIATE" such that two vowels never come together, is

(A) $\frac{6!}{2!} \times \frac{7!}{2!\,3!}$
(B) $\frac{5!}{2!} \times \frac{6!}{3!}$
(C) $6! \times \frac{7!}{2!\,3!}$
(D) $\frac{6!}{2!} \times \frac{6!}{2!\,3!}$

Answer: (A) $\frac{6!}{2!} \times \frac{7!}{2!\,3!}$ · Checked by our team

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Q285 AP EAMCET 2020 · 18 Sep · Shift 1 MCQ

In an apartment there are 30 kids. If each kid plays table tennis with other kid, then the total number of matches played by them

(A) ${}^{30}C_2$
(B) ${}^{30}P_2$
(C) ${}^{30}C_2 - 1$
(D) ${}^{30}P_2 - 1$

Answer: (A) ${}^{30}C_2$ · The council's preliminary key

Q286 AP EAMCET 2020 · 18 Sep · Shift 1 MCQ

A polygon has 54 diagonals. The number of sides of this polygon is _____

(A) 12
(B) 15
(C) 16
(D) 9

Answer: (A) 12 · The council's preliminary key

Q287 AP EAMCET 2020 · 18 Sep · Shift 2 MCQ

Find the total number of rectangles on a normal chessboard.

(A) ${}^{8}C_2 \times {}^{8}C_2$
(B) ${}^{8}C_2 + {}^{8}C_2$
(C) ${}^{9}C_2 \times {}^{9}C_2$
(D) ${}^{9}P_2 \times {}^{9}P_2$

Answer: (C) ${}^{9}C_2 \times {}^{9}C_2$ · The council's preliminary key

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Q288 AP EAMCET 2020 · 18 Sep · Shift 2 MCQ

The crew of an 8-oar boat is to be chosen from 12 men, of whom 3 can row on the stroke side only. The number of ways in which the crew can be arranged is

(A) ${}^{9}C_{4} \times {}^{8}C_{3} \times 3! \times 4!$
(B) ${}^{9}C_{4} \times {}^{8}C_{4} \times 4! \times 4!$
(C) ${}^{8}C_{3} \times {}^{8}C_{3} \times 4! \times 3!$
(D) ${}^{9}C_{4} \times {}^{9}C_{4} \times 4! \times 4!$

Answer: (B) ${}^{9}C_{4} \times {}^{8}C_{4} \times 4! \times 4!$ · The council's preliminary key

Q289 AP EAMCET 2020 · 17 Sep · Shift 1 MCQ

Find the number of ways of selecting 4 pens and 3 pencils from a packet of 8 pens and 5 pencils.

(A) 700
(B) ${}^{8}P_{4} \times {}^{5}P_{3}$
(C) ${}^{8}P_{4} + {}^{5}P_{3}$
(D) $700 \times {}^{8}P_{4}$

Answer: (A) 700 · The council's preliminary key

Q290 AP EAMCET 2020 · 17 Sep · Shift 1 MCQ

In how many ways one can send 6 new-year greeting cards to 4 people?

(A) 360
(B) 180
(C) 720
(D) 90

Answer: (A) 360 · The council's preliminary key

Q291 AP EAMCET 2020 · 17 Sep · Shift 1 MCQ

Find the number of different garlands that can be prepared using 6 different coloured flowers.

(A) 120
(B) 60
(C) 119
(D) 59

Answer: (B) 60 · The council's preliminary key

Q292 AP EAMCET 2020 · 17 Sep · Shift 2 MCQ

On an $n \times n$ chessboard, the total number of rectangles which are not squares is 350. Then the number of white squares on the chessboard is _____

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(A) 32
(B) 50
(C) 18
(D) 72

Answer: (C) 18 · The council's preliminary key

Q293 AP EAMCET 2020 · 17 Sep · Shift 2 MCQ

If $1 \times 1! + 2 \times 2! + 3 \times 3! + \cdots + n \times n! = 11! - 1$, then the maximum value of ${}^{n}C_{r}$ is

(A) 462
(B) 252
(C) 162
(D) 512

Answer: (B) 252 · The council's preliminary key

Q294 AP EAMCET 2020 · 17 Sep · Shift 2 MCQ

Letters of the word 'GOVIND' are permuted and arranged as in a dictionary then the number of words that appear after the word 'GOVIND' is _____

(A) 519
(B) 510
(C) 506
(D) 511

Answer: (C) 506 · The council's preliminary key

Q295 TS EAMCET 2020 · 14 Sep · Shift 1 MCQ

Let $S_r = \{(x, y, z) \mid x + y + z = 11,\ x \geq r,\ y \geq r,\ z \geq r,\ x, y, z, r \text{ are integers}\}$ and $n(S_r)$ represents the number of elements in S_r. Then $n(S_2) + n(S_3) + n(S_4) =$

(A) 78
(B) 27
(C) 165
(D) 234

Answer: (B) 27 · Official TGCHE final key

Q296 TS EAMCET 2020 · 14 Sep · Shift 1 MCQ

A certain question paper contains three parts A, B, C with four questions in part A, five questions in part B and six questions in part C. A student is required to answer seven questions choosing at least two questions from each part. Then the total number of different ways a student can choose his seven questions for answering, is

(A) 1500
(B) 1200
(C) 1900
(D) 2700

Answer: (D) 2700 · Official TGCHE final key

Q297 TS EAMCET 2020 · 14 Sep · Shift 2 MCQ

Consider the following statements:
I: The number of positive integral solutions of $x_1 + x_2 + x_3 + x_4 = 10$ is 286
II: If $25! = 10^n \times k$, $(k \in \mathbb{N})$ then $n = 6$
Which one of the following options is true?

(A) Only I is true
(B) Only II is true
(C) Both I and II are true
(D) Both I and II are false

Answer: (B) Only II is true · Official TGCHE final key

Q298 TS EAMCET 2020 · 14 Sep · Shift 2 MCQ

A student is allowed to select at least $(n+1)$ books but not all books from a collection of $(2n+1)$ books. If the total number of ways in which he can select these books is 255, then the number of books in that collection is

(A) 4
(B) 9
(C) 10
(D) 7

Answer: (B) 9 · Official TGCHE final key

Q299 TS EAMCET 2020 · 11 Sep · Shift 1 MCQ

The number of integers x, y, z, w satisfying $x + y + z + w = 25$ and $x, y, z \geq -1$, $w \geq 1$, is

(A) ${}^{28}C_3$
(B) ${}^{30}C_3$
(C) ${}^{29}C_3$
(D) ${}^{31}C_3$

Answer: (B) ${}^{30}C_3$ · Official TGCHE final key

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Q300 TS EAMCET 2020 · 11 Sep · Shift 1 MCQ

If 3 sisters and 8 other girls are together playing a game, then the number of ways in which all the girls are seated around a circle such that the three sisters are not seated together, is

(A) $11! \times 8$
(B) $8! \times 504$
(C) $7! \times 210$
(D) $8! \times 84$

Answer: (D) $8! \times 84$ · Official TGCHE final key

Q301 TS EAMCET 2020 · 11 Sep · Shift 2 MCQ

For $n = 1, 2, 3, \ldots\ldots\ldots 50$, let $A = \left\{ a_n / a_n = \begin{cases} (-1)^{\frac{n}{2}} \left(\frac{n}{2}\right), & \text{if } n \text{ is even} \\ (-1)^{\frac{n-1}{2}} \left(\frac{n-1}{2}\right), & \text{if } n \text{ is odd} \end{cases} \right\}$ and B is the set of all distinct elements of A. The number of permutations all the elements of set B such that even integers are in increasing order, is

(A) $\frac{26!}{12!}$
(B) $\frac{49!}{12!\,13!}$
(C) $\frac{50!}{24!\,26!}$
(D) $\frac{26!}{13!\,12!}$

Answer: (A) $\frac{26!}{12!}$ · Official TGCHE final key

Q302 TS EAMCET 2020 · 11 Sep · Shift 2 MCQ

If α represents the number of arrangements of p men and q women in a row such that all men are together and β represents the number of circular arrangements of the same people with the same condition, then $\alpha : \beta$ is

(A) $(q+1)\,p! : 1$
(B) $(q+1) : 1$
(C) $1 : p!$
(D) $p! : q!$

Answer: (B) $(q+1) : 1$ · Official TGCHE final key

Q303 TS EAMCET 2020 · 10 Sep · Shift 1 MCQ

The total number of three digit and five digit integers which can be formed by using the digits 0, 1, 2, 3, 4, 5 but using each digit not more than once in each number is

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(A) 100
(B) 600
(C) 700
(D) 800

Answer: (C) 700 · Official TGCHE final key

Q304 TS EAMCET 2020 · 10 Sep · Shift 1 MCQ

At an election a voter may vote for any number of candidates not exceeding the number to be elected. If 4 candidates are to be elected out of the 12 contested in the election and voter votes for at least one candidate, then the number of ways in which a voter can vote is

(A) 793
(B) 298
(C) 781
(D) 1585

Answer: (A) 793 · Official TGCHE final key

Q305 TS EAMCET 2020 · 10 Sep · Shift 2 MCQ

If x and y represent the number of arrangements of the letters of word ATRAPATRAM such that (i) all A's are together and (ii) no two A's are together respectively, then $x + y =$

(A) $\frac{10!}{4!\,2!\,2!}$
(B) $\frac{7! \times 15}{2!\,2!\,4!}$
(C) $\frac{6!}{2!\,2!} \times 42$
(D) $\frac{7!}{2!2!} + \frac{6! \cdot {}^{7}P_{4}}{2!2!}$

Answer: (C) $\frac{6!}{2!\,2!} \times 42$ · Official TGCHE final key

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Q306 TS EAMCET 2020 · 10 Sep · Shift 2 MCQ

Numbers between 1 and 10,000 are formed using the digits 2 and 3 only once and the digit 4 twice. If the numbers thus formed are arranged in increasing order and x, y represent the ranks of 4324 and 324 respectively then $x - y =$

(A) 17
(B) 31
(C) 14
(D) 16

Answer: (A) 17 · Official TGCHE final key

Q307 TS EAMCET 2020 · 9 Sep · Shift 1 MCQ

Let $m = (9n^2 + 54n + 80)(9n^2 + 45n + 54)(9n^2 + 36n + 35)$. The greatest positive integer which divides m, for all positive integers n, is

(A) 720
(B) 724
(C) 696
(D) 842

Answer: (A) 720 · Official TGCHE final key

Q308 TS EAMCET 2020 · 9 Sep · Shift 1 MCQ

If the number of all possible permutations of the letters of the word MATHEMATICS in which the repeated letters are not together is 982(X), then X =

(A) 5040
(B) 14400
(C) 21600
(D) 86400

Answer: (A) 5040 · Official TGCHE final key

Q309 TS EAMCET 2020 · 9 Sep · Shift 1 MCQ

There are 10 red and 5 yellow roses of different sizes. If x is the number of garlands that can be formed with all these flowers so that no two yellow roses come together and y is the number of garlands formed with all these flowers so that all the red roses coming together, then $\frac{2(x-y)}{10!} =$

(A) $\frac{9!}{5!} - 5!$
(B) $(11)^2 \cdot (4!)$
(C) $10! - 6!$
(D) $6! \times (5! - 2)$

Answer: (A) $\frac{9!}{5!} - 5!$ · Official TGCHE final key

Q310 TS EAMCET 2020 · 9 Sep · Shift 2 MCQ

Five boys and five girls are writing an examination in a hall in which 5 benches are arranged in a row and only two students are to be seated on every bench at either of its ends. If the seating arrangement is to be such that no two boys or no two girls sit together as neighbours (a student should not have a student of same gender either on left or right; immediate front or back), then the total number of such arrangements is

(A) 28800
(B) 14400
(C) 240
(D) 480

Answer: (A) 28800 · Official TGCHE final key

Q311 TS EAMCET 2020 · 9 Sep · Shift 2 MCQ

Let x denote the number of ways of selecting at least one ball from a bag containing 3 identical red balls, 4 identical blue balls and 5 identical green balls. Let y denote the number of ways in which a student will fail in an examination, when he has to write the examination in 5 different subjects. Then $x + y =$

(A) 150
(B) 151
(C) 152
(D) 301

Answer: (A) 150 · Official TGCHE final key

Q312 TS EAMCET 2019 · 6 May · Shift 1 MCQ

The number of different permutations of letters that can be formed by taking 4 letters at a time from the letters of the word 'REPETITION' is

(A) 210
(B) 720
(C) 1398
(D) 5040

Answer: (C) 1398 · Official TGCHE final key

Q313 TS EAMCET 2019 · 6 May · Shift 1 MCQ

If $n = (210)^2(360)(143)$, then the total number of non trivial factors of n is

(A) 256
(B) 872
(C) 1504
(D) 1438

Answer: (D) 1438 · Official TGCHE final key

Q314 TS EAMCET 2019 · 4 May · Shift 1 MCQ

The number of 4 letter permutations formed with English alphabet such that the number of distinct vowels is equal to the number of distinct consonants, when repetition is allowed, is

(A) 630
(B) $3^5 \times 70$
(C) $3^6 \times 70$
(D) $3^4 \times 60$

Answer: (C) $3^6 \times 70$ · Official TGCHE final key

Q315 TS EAMCET 2019 · 4 May · Shift 1 MCQ

A student is asked to answer 10 out of 13 questions in an examination such that he must answer atleast four questions from the first five questions. The number of choices available to him is

(A) 140
(B) 176
(C) 196
(D) 280

Answer: (C) 196 · Official TGCHE final key

Q316 TS EAMCET 2019 · 4 May · Shift 2 MCQ

Consider the following statements:
i) Number of one-one functions from set A to set B, where $O(A) = m$ and $O(B) = n$ $(m \leq n)$ is given by ${}^nP_m$.
ii) Number of ways in which 'n' people can be arranged at a circular table is $\frac{(n-1)!}{2}$.
iii) Number of ways of selecting atleast one thing out of the given n distinct things is $2^n - 1$.
iv) Number of ways in which n distinguishable objects can be distributed into k distinguishable bins is ${}^nC_{k-1}$.
Then which one of the following is true?

(A) All the statements are true
(B) All except (iii) are true
(C) Only (i) and (iii) are true
(D) Only (ii) is false

Answer: (C) Only (i) and (iii) are true · Official TGCHE final key

Q317 TS EAMCET 2019 · 4 May · Shift 2 MCQ

The number of ways in which 3 identical balls can be distributed into 7 distinct bins is

(A) 49
(B) 84
(C) 35
(D) 42

Answer: (B) 84 · Official TGCHE final key

Q318 TS EAMCET 2019 · 3 May · Shift 1 MCQ

Let x denote the number of ways of arranging m boys and m girls in a row so that no two boys sit together. If y and z give the number of ways of arranging m boys and m girls in a row and around a circular table respectively so that boys and girls sit alternately, then $x : y : z =$

(A) $m+1 : m : m-1$
(B) $3 : 2 : 1$
(C) $m-1 : m : 2$
(D) $(m+1)m : 2m : 1$

Answer: (D) $(m+1)m : 2m : 1$ · Official TGCHE final key

Q319 TS EAMCET 2019 · 3 May · Shift 1 MCQ

The number of even numbers greater than 1000000 that can be formed using all the digits 1, 2, 0, 2, 4, 2 and 4 is

(A) 120
(B) 240
(C) 310
(D) 480

Answer: (C) 310 · Official TGCHE final key

Q320 TS EAMCET 2019 · 3 May · Shift 2 MCQ

The number of values of $n \in \mathbb{N}$ for which ${}^{n+2}C_2 : {}^{n+3}C_1 = 4 : 2$ is

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

Answer: (A) 0 · Official TGCHE final key

Q321 TS EAMCET 2019 · 3 May · Shift 2 MCQ

Consider the following statements
i. Number of ways of placing 'n' objects in k bins ($k \leq n$) such that no bin is empty is ${}^{(n-1)}C_{k-1}$
ii. Number of ways of writing a positive integer 'n' into a sum of k positive integers is ${}^{(n-1)}C_{k-1}$

iii. Number of ways of placing 'n' objects in k bins such that atleast one bin is non-empty is ${}^{(n-1)}C_{k-1}$
iv. ${}^{n}C_{k} - {}^{n-1}C_{k} = {}^{(n-1)}C_{k-1}$
Then which of the above statements are true?

(A) all the four statements
(B) (iii) and (iv) only.
(C) all except (iii).
(D) all except (i).

Answer: (C) all except (iii). · Official TGCHE final key

Q322 AP EAMCET 2019 · 23 Apr · Shift 1 MCQ

If all the letters of the word REPEAT are permuted in all possible ways and if the six letter permutations thus formed are arranged in the dictionary order, then the rank of the word REPEAT is

(A) 133
(B) 267
(C) 266
(D) 132

Answer: (B) 267 · Official APSCHE final key

Q323 AP EAMCET 2019 · 23 Apr · Shift 1 MCQ

15 persons are sitting around a circular table. The number of ways of selecting three persons at a time from them, such that the selected three did not sit together at one place is

(A) 455
(B) 15
(C) 45
(D) 440

Answer: (D) 440 · Official APSCHE final key

Q324 AP EAMCET 2019 · 22 Apr · Shift 1 MCQ

In an examination hall there are 'mn' chairs in m rows and n columns. The number of ways in which m students can be seated such that no row is vacant is

(A) $m^n\, n!$
(B) $n^m\, m!$
(C) $m^m\, n!$
(D) $n^n\, m!$

Answer: (B) $n^m\, m!$ · Official APSCHE final key

Q325 AP EAMCET 2019 · 22 Apr · Shift 1 MCQ

Consider the following statements:
I: The number of non trivial even divisors of the number $2^{\alpha_1}3^{\alpha_2}4^{\alpha_3}5^{\alpha_4}6^{\alpha_5}$ is $(\alpha_1+1)(\alpha_2+1)(\alpha_3+1)(\alpha_4+1)(\alpha_5+1)-2$
II: The number of nontrivial odd divisors of the number $2^{\alpha_1}\cdot 3^{\alpha_2}\cdot 4^{\alpha_3}\cdot 5^{\alpha_4}\cdot 6^{\alpha_5}$ is $\alpha_2+\alpha_4+\alpha_5+\alpha_2\alpha_4+\alpha_4\alpha_5$.
Then

(A) I is false and II is false
(B) I is true, II is true
(C) I is false, II is true
(D) I is true, II is false

Answer: (C) I is false, II is true · Official APSCHE final key

Q326 AP EAMCET 2019 · 22 Apr · Shift 2 MCQ

I: The number of all ten digited numbers that can be formed with all the distinct digits and which are divisible by 4 is $15\times 8!$.
II: The number of positive integers that can be formed by using the digits 0, 1, 2, 3, 4, 5 without any repetition is 1630.

(A) Only I is true
(B) Only II is true
(C) Both I and II are true
(D) Both I and II are false

Answer: (B) Only II is true · Official APSCHE final key

Q327 AP EAMCET 2019 · 22 Apr · Shift 2 MCQ

A man has 5 male and 4 female relatives. His wife has 4 male and 5 female relatives. The number of ways in which they can invite 5 male and 5 female relatives so that 5 of them are man's relatives and remaining 5 are his wife's relatives

(A) 5426
(B) 5226
(C) 5526
(D) 5626

Answer: (D) 5626 · Official APSCHE final key

Q328 AP EAMCET 2019 · 21 Apr · Shift 1 MCQ

There are 20 straight lines in a plane such that no two of them are parallel and no three of them are concurrent. If their points of intersection are joined, then the number of new line segments formed

are

(A) 3420
(B) 14535
(C) 2907
(D) 17955

Answer: (B) 14535 · Official APSCHE final key

Q329 AP EAMCET 2019 · 21 Apr · Shift 2 MCQ

Six persons A, B, C, D, E and F are to be seated at a circular table facing towards the centre. Then the number of ways that can be done if A must have either E or F on his immediate right and E must have either F or D on his immediate right, is

(A) 18
(B) 30
(C) 12
(D) 24

Answer: (A) 18 · Official APSCHE final key

Q330 AP EAMCET 2019 · 21 Apr · Shift 2 MCQ

Number of ways of forming a committee of 6 members out of 5 Indians, 5 Americans and 5 Australians such that there will be atleast one member from each country in the committee is

(A) 3375
(B) 4375
(C) 3875
(D) 4250

Answer: (B) 4375 · Official APSCHE final key

Q331 AP EAMCET 2019 · 20 Apr · Shift 1 MCQ

All the letters of the word ANIMAL are permuted in all possible ways and the permutations thus formed are arranged in dictionary order. If the rank of the word ANIMAL is x, then the permutation with rank x, among the permutations obtained by permuting the letters of the word PERSON and arranging the permutations thus formed in dictionary order is

(A) ENOPRS
(B) NOSPRE
(C) NOEPRS
(D) ESORNP

Answer: (D) ESORNP · Official APSCHE final key

Q332 AP EAMCET 2019 · 20 Apr · Shift 1 MCQ

A student is allowed to choose atmost n books from a collection of $2n+1$ books. If the total number of ways in which he can select atleast one book is 255, then the value of n is

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

Answer: (A) 4 · Official APSCHE final key

Q333 AP EAMCET 2019 · 20 Apr · Shift 2 MCQ

The number of five digit numbers that are divisible by 6 which can be formed by choosing digits from $\{0,1,2,3,4,5\}$, when repetition is allowed, is

(A) 648
(B) 540
(C) 1296
(D) 1080

Answer: (D) 1080 · Official APSCHE final key

Q334 AP EAMCET 2019 · 20 Apr · Shift 2 MCQ

A person invites 8 guests to a dinner and places 5 of them at one table and the remaining 3 at another, both the tables being round. The number of ways in which the guests can be arranged is

(A) 40320
(B) 2688
(C) 8064
(D) 13440

Answer: (B) 2688 · Official APSCHE final key

Q335 AP EAMCET 2019 · 20 Apr · Shift 2 MCQ

If 15^k divides 47! but 15^{k+1} does not divide it, then $k=$

(A) 15
(B) 12
(C) 10
(D) 5

Answer: (C) 10 · Official APSCHE final key

Q336 TS EAMCET 2018 · 7 May · Shift 1 MCQ

The number of natural numbers less than 1000 in which no digit is repeated is

(A) 729
(B) 738
(C) 792
(D) 836

Answer: (B) 738 · The council's preliminary key

Q337 TS EAMCET 2018 · 5 May · Shift 1 MCQ

The number of ways in which four letters can be put in four addressed envelops so that no letter goes into envelope meant for it is

(A) 8
(B) 12
(C) 16
(D) 9

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

Q338 TS EAMCET 2018 · 5 May · Shift 1 MCQ

If the integer represented by 100! has K consecutive zeros at the end, then K=

(A) 24
(B) 36
(C) 64
(D) 128

Answer: (A) 24 · The council's preliminary key

Q339 TS EAMCET 2018 · 5 May · Shift 2 MCQ

There are 10 points in a plane of which no three points are collinear except 4. Then, the number of distinct triangles that can be formed by joining these points such that atleast one of the vertices of every triangle formed is from the given 4 collinear points is

(A) 116
(B) 96
(C) 120
(D) 100

Answer: (B) 96 · The council's preliminary key

Q340 TS EAMCET 2018 · 5 May · Shift 2 MCQ

The number of ways of arranging 8 boys and 8 girls in a row so that boys and girls sit alternately is

(A) $9!$
(B) $(9!)(8!)$
(C) $(8!)^2$
(D) $2!\,(8!)^2$

Answer: (D) $2!\,(8!)^2$ · The council's preliminary key

Q341 TS EAMCET 2018 · 4 May · Shift 1 MCQ

If all possible numbers are formed by using the digits 1, 2, 3, 5, 7 without repetition and they are arranged in descending order, then the rank of the number 327 is

(A) 31
(B) 175
(C) 149
(D) 271

Answer: (D) 271 · The council's preliminary key

Q342 TS EAMCET 2018 · 4 May · Shift 1 MCQ

If a is the number of all even divisors and b is the number of all odd divisors of the number 10800, then $2a + 3b =$

(A) 72
(B) 132
(C) 96
(D) 136

Answer: (B) 132 · The council's preliminary key

Q343 TS EAMCET 2018 · 4 May · Shift 2 MCQ

The number of proper divisors of the number obtained by dividing $13!$ with 100 is

(A) 216
(B) 430
(C) 214
(D) 790

Answer: (B) 430 · The council's preliminary key

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Q344 TS EAMCET 2018 · 4 May · Shift 2 MCQ

In an admission test, there are 15 multiple choice questions. Each question is followed by 4 alternatives to choose. Out of these there may be one or more than one correct answers. If a student attempts all the 15 questions and marks the answers randomly, then number of different ways he can answer the question paper is

(A) $4 \times {}^{15}C_4$
(B) 15^{15}
(C) 4^{15}
(D) $4! \cdot 15!$

Answer: (B) 15^{15} · The council's preliminary key

Q345 AP EAMCET 2018 · 24 Apr · Shift 1 MCQ

Let m be a natural number such that $20000 < m < 60000$ and let k be the sum of all the digits in m. Then the number of numbers m for which k is even, is

(A) 19909
(B) 19989
(C) 18999
(D) 19999

Answer: (D) 19999 · The council's preliminary key

Q346 AP EAMCET 2018 · 24 Apr · Shift 1 MCQ

There are three sections in a Question Paper, each containing 4 Questions. If a candidate has to answer only 5 Questions from this paper without leaving any section, then number of ways the candidate can make the choice of questions is

(A) 624
(B) 704
(C) 384
(D) 432

Answer: (A) 624 · The council's preliminary key

Q347 AP EAMCET 2018 · 24 Apr · Shift 2 MCQ

The number of ways in which all the letters of the word COMBINATION can be arranged so that the vowels always come together is

(A) 45678
(B) 50400
(C) 75600
(D) 82300

Answer: (C) 75600 · The council's preliminary key

Q348 AP EAMCET 2018 · 24 Apr · Shift 2 MCQ

If four points are taken on each of three parallel lines in a plane, then the maximum number of triangles formed with these points is

(A) 64
(B) 144
(C) 208
(D) 80

Answer: (C) 208 · The council's preliminary key

Q349 AP EAMCET 2018 · 23 Apr · Shift 1 MCQ

Let $S = \{0, 1, 2, 3, \ldots, 100\}$. The number of ways of selecting $x, y \in S$ such that $x \neq y$ and $x + y = 100$ is

(A) 51
(B) 40
(C) 50
(D) 100

Answer: (C) 50 · The council's preliminary key

Q350 AP EAMCET 2018 · 23 Apr · Shift 1 MCQ

If all the seven letters of the word LEADING are permuted in all possible ways and the words thus formed are arranged as in the dictionary order, then the word in 2017th place is

(A) ELIGDAN
(B) ELNADGI
(C) ELINADG
(D) ELNDAGI

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

Q351 AP EAMCET 2018 · 23 Apr · Shift 1 MCQ

From a group of 10 men and 8 women, the number of ways of forming a committee of 8 members with not more than 5 men and not less than 5 women is

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(A) 8061
(B) 8060
(C) 20997
(D) 20952

Answer: (A) 8061 · The council's preliminary key

Q352 AP EAMCET 2018 · 23 Apr · Shift 2 MCQ

The number of three digit numbers in which 9 appears only in one place is

(A) 243
(B) 234
(C) 217
(D) 225

Answer: (D) 225 · The council's preliminary key

Q353 AP EAMCET 2018 · 23 Apr · Shift 2 MCQ

${}^{34}C_{10} + 3 \cdot \left({}^{34}C_{9}\right) + 3 \cdot \left({}^{34}C_{8}\right) + {}^{34}C_{7} =$

(A) ${}^{38}C_{10}$
(B) ${}^{36}C_{10}$
(C) ${}^{37}C_{10}$
(D) ${}^{35}C_{10}$

Answer: (C) ${}^{37}C_{10}$ · The council's preliminary key

Q354 AP EAMCET 2018 · 22 Apr · Shift 1 MCQ

The sum of the four digit even numbers that can be formed with the digits 0, 3, 5, 4 with out repetition is

(A) 14684
(B) 43536
(C) 46526
(D) 52336

Answer: (B) 43536 · The council's preliminary key

Q355 AP EAMCET 2018 · 22 Apr · Shift 1 MCQ

If x is the number of ways in which six women and six men can be arranged to sit in a row such that no two women are together and if y is the number of ways they are seated around a table in the same manner, then $x : y =$

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(A) $12 : 1$
(B) $42 : 1$
(C) $16 : 1$
(D) $6 : 1$

Answer: (B) $42 : 1$ · The council's preliminary key

Q356 AP EAMCET 2018 · 22 Apr · Shift 1 MCQ

The number of 5-letter words that can be formed by using the letters of the word SARANAM is

(A) 1120
(B) 6720
(C) 480
(D) 720

Answer: (C) 480 · The council's preliminary key

Q357 AP EAMCET 2018 · 22 Apr · Shift 2 MCQ

If all the digits in the number 53426 are permuted in all possible ways and are arranged in decreasing order, then the number having rank 89, is

(A) 34265
(B) 34256
(C) 43526
(D) 43265

Answer: (A) 34265 · The council's preliminary key

Q358 AP EAMCET 2018 · 22 Apr · Shift 2 MCQ

Three parallel straight lines L_1, L_2 and L_3 lie on the same plane. Consider 5 points on L_1, 7 points on L_2 and 9 points on L_3. Then the maximum possible number of triangles formed with vertices at these points, is

(A) 1330
(B) 1200
(C) 1201
(D) 129

Answer: (C) 1201 · The council's preliminary key

Q359 TS EAMCET 2017 · 12 May · Offline MCQ

A village has 10 players. A team of 6 players is to be formed. 5 members are chosen first out of these 10 players and then the captain is chosen from the remaining players. Then the total number of ways of choosing such teams is

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(A) 1260
(B) 210
(C) $(^{10}C_6)\,5!$
(D) $(^{10}C_5)\,6$

Answer: (A) 1260 · The council's preliminary key

Q360 TS EAMCET 2017 · 12 May · Offline MCQ

Using the letters of the word TRICK, a five letter word with distinct letters is formed such that C is in the middle. In how many ways this is possible?

(A) 6
(B) 120
(C) 24
(D) 72

Answer: (C) 24 · The council's preliminary key

Q361 AP EAMCET 2017 · 26 Apr · Shift 1 MCQ

The number of different ways of preparing a garland using 6 distinct white roses and 5 distinct red roses such that no two red roses come together, is

(A) 151200
(B) 21600
(C) 43200
(D) 86400

Answer: (C) 43200 · The council's preliminary key

Q362 AP EAMCET 2017 · 26 Apr · Shift 1 MCQ

There are 10 intermediate stations on a railway line between two particular stations. The number of ways that a train can be made to stop at 3 of these intermediate stations so that no two of these halting stations are consecutive, is

(A) 56
(B) 126
(C) 20
(D) 120

Answer: (A) 56 · The council's preliminary key

Q363 AP EAMCET 2017 · 26 Apr · Shift 1 MCQ

$$^{37}C_4 + \sum_{r=1}^{5} {}^{(42-r)}C_3 =$$

(A) ${}^{38}C_4$
(B) ${}^{39}C_4$
(C) ${}^{41}C_4$
(D) ${}^{42}C_4$

Answer: (D) ${}^{42}C_4$ · The council's preliminary key

Q364 AP EAMCET 2017 · 26 Apr · Shift 2 MCQ

A question paper contains 4 questions each having 4 alternative answers. The number of ways that a candidate can answer one or more questions is

(A) 255
(B) 256
(C) 624
(D) 625

Answer: (C) 624 · The council's preliminary key

Q365 AP EAMCET 2017 · 26 Apr · Shift 2 MCQ

If ${}^{(n-1)}C_r = (k^2-3)\,{}^{n}C_{r+1}$, then an interval containing the values of k, is

(A) $(-\infty, -3]$
(B) $[-2, -\sqrt{3})$
(C) $[-\sqrt{3}, \sqrt{3}]$
(D) $(-\infty, -\sqrt{2}]$

Answer: (B) $[-2, -\sqrt{3})$ · The council's preliminary key

Q366 AP EAMCET 2017 · 26 Apr · Shift 2 MCQ

If the letters of the word "CAPITAL" are permuted in all possible ways and the words are arranged in a dictionary order, then the rank of the word "CAPITAL" is

(A) 802
(B) 803
(C) 720
(D) 712

Answer: (B) 803 · The council's preliminary key

Q367 AP EAMCET 2017 · 25 Apr · Shift 1 MCQ

The number of ways of awarding 9 scholarships among three students so that each may have 3 scholarships is

(A) 280
(B) 84
(C) 504
(D) 1680

Answer: (D) 1680 · The council's preliminary key

Q368 AP EAMCET 2017 · 25 Apr · Shift 1 MCQ

In the prime factorization of $37! = 2^{\alpha_2}.3^{\alpha_3}.5^{\alpha_5}...37^{\alpha_{37}}$ the ratio $\alpha_3 : \alpha_5 =$

(A) $3 : 5$
(B) $17 : 8$
(C) $5 : 3$
(D) $8 : 21$

Answer: (B) $17 : 8$ · The council's preliminary key

Q369 AP EAMCET 2017 · 25 Apr · Shift 1 MCQ

The number of four digit numbers that can be formed using the digits 1, 2, 3, 4, 5, 6, 7, 8, 9 which are divisible by 3, when repetition of digits is allowed any number of times, is

(A) 2187
(B) 1458
(C) 6561
(D) 2916

Answer: (A) 2187 · The council's preliminary key

Q370 AP EAMCET 2017 · 25 Apr · Shift 2 MCQ

The number of all four digit numbers which do not have four distinct digits is

(A) 4464
(B) 4848
(C) 4355
(D) 4454

Answer: (A) 4464 · The council's preliminary key

Q371 AP EAMCET 2017 · 25 Apr · Shift 2 MCQ

The number of ways of arranging the letters of the word BANANA so that the two Ns do not come together, is

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(A) 60
(B) 80
(C) 40
(D) 120

Answer: (C) 40 · The council's preliminary key

Q372 AP EAMCET 2017 · 24 Apr · Shift 1 MCQ

The number of different signals which can be given from 7 different coloured sheets, taking one or more at a time is

(A) 127
(B) 5913
(C) 13699
(D) 13700

Answer: (C) 13699 · The council's preliminary key

Q373 AP EAMCET 2017 · 24 Apr · Shift 1 MCQ

If the number of subsets with 8 elements from the set $A = \{a_1, a_2, a_3, \ldots a_n\}$, $n \geq 8$, is five times the number of such subsets containg a_4, then $n =$

(A) 35
(B) 40
(C) 45
(D) 0

Answer: (B) 40 · The council's preliminary key

Q374 AP EAMCET 2017 · 24 Apr · Shift 1 MCQ

${}^{29}C_5 + \sum_{r=0}^{4} {}^{(33-r)}C_4 =$

(A) ${}^{32}C_4$
(B) ${}^{35}C_5$
(C) ${}^{34}C_4$
(D) ${}^{34}C_5$

Answer: (D) ${}^{34}C_5$ · The council's preliminary key

Q375 AP EAMCET 2017 · 24 Apr · Shift 2 MCQ

Suppose t_n is the number of triangles formed using the vertices of a regular polygon of n sides. If $t_{n+1} = t_n + 28$, then $n =$

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(A) 11
(B) 9
(C) 8
(D) 7

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

Q376 AP EAMCET 2017 · 24 Apr · Shift 2 MCQ

The number of integers greater than 3000 that can be formed by any number of digits from $0, 1, 2, 3, 4, 5$ without repetition in each number is

(A) 1630
(B) 1380
(C) 1260
(D) 1200

Answer: (B) 1380 · The council's preliminary key

Q377 TS EAMCET 2016 · 15 May · Offline MCQ

The number of 4 letter words that can be formed with the letters in the word EQUATION with at least one letter repeated is

(A) 2400
(B) 2408
(C) 2416
(D) 2432

Answer: (C) 2416 · Official TGCHE final key

Q378 TS EAMCET 2016 · 15 May · Offline MCQ

The number of divisors of 7! is

(A) 24
(B) 72
(C) 64
(D) 60

Answer: (D) 60 · Official TGCHE final key

Q379 AP EAMCET 2016 · 29 Apr · Offline MCQ

The greatest positive integer which divides $(n+16)(n+17)(n+18)(n+19)$, for all positive integers n, is

(A) 6
(B) 24
(C) 28
(D) 20

Answer: (B) 24 · The council's preliminary key

Q380 AP EAMCET 2016 · 29 Apr · Offline MCQ

The sum of all 4-digit numbers that can be formed using the digits 2, 3, 4, 5, 6 without repetition, is

(A) 533820
(B) 532280
(C) 533280
(D) 532380

Answer: (C) 533280 · The council's preliminary key

Q381 AP EAMCET 2016 · 29 Apr · Offline MCQ

If a set A has 5 elements, then the number of ways of selecting two subsets P and Q from A such that P and Q are mutually disjoint, is

(A) 64
(B) 128
(C) 243
(D) 729

Answer: (C) 243 · The council's preliminary key

Q382 AP EAMCET 2014 · 22 May · Offline MCQ

Out of thirty points in a plane, eight of them are collinear. The number of straight lines that can be formed by joining these points is

(A) 296
(B) 540
(C) 408
(D) 348

Answer: (C) 408 · The council's preliminary key

Q383 AP EAMCET 2014 · 22 May · Offline MCQ

If n is an integer with $0 \leq n \leq 11$ then the minimum value of $n!\,(11-n)!$ is attained when a value of $n =$

(A) 11
(B) 5
(C) 7
(D) 9

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

Q384 AP EAMCET 2013 · 10 May · Offline MCQ

${}^nC_{r-1} = 330, {}^nC_r = 462, {}^nC_{r+1} = 462 \Rightarrow r =$

(A) 3
(B) 4
(C) 5
(D) 6

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

Q385 AP EAMCET 2013 · 10 May · Offline MCQ

10 men and 6 women are to be seated in a row so that no two women sit together. The number of ways they can be seated is :

(A) $11!\,10!$
(B) $\frac{11!}{6!\,5!}$
(C) $\frac{10!\,9!}{5!}$
(D) $\frac{11!\,10!}{5!}$

Answer: (D) $\frac{11!\,10!}{5!}$ · The council's preliminary key

Q386 AP EAMCET 2013 · 10 May · Offline MCQ

If t_n denotes the number of triangles formed with n points in a plane no three of which are collinear and if $t_{n+1} - t_n = 36$, then $n =$

(A) 7
(B) 8
(C) 9
(D) 10

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

Q387 AP EAMCET 2012 · 12 May · Offline MCQ

A regular polygon of n sides has 170 diagonals. Then n =

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(A) 12
(B) 17
(C) 20
(D) 25

Answer: (C) 20 · Official APSCHE final key

Q388 AP EAMCET 2012 · 12 May · Offline MCQ

A committee of 12 members is to be formed from 9 women and 8 men. The number of committees in which the women are in majority is

(A) 2720
(B) 2702
(C) 2270
(D) 2278

Answer: (B) 2702 · Official APSCHE final key

Q389 AP EAMCET 2012 · 12 May · Offline MCQ

A student has to answer 10 out of 13 questions in an examination choosing at least 5 questions from the first 6 questions. The number of choices available to the student is

(A) 63
(B) 91
(C) 161
(D) 196

Answer: (C) 161 · Official APSCHE final key

Q390 AP EAMCET 2011 · 8 May · Offline MCQ

A bag contains n white and n black balls. Pairs of balls are drawn at random without replacement successively, until the bag is empty. If the number of ways in which each pair consists of one white and one black ball is 14,400, then $n =$

(A) 6
(B) 5
(C) 4
(D) 3

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

Q391 AP EAMCET 2011 · 8 May · Offline MCQ

The number of five digit numbers divisible by 5 that can be formed using the numbers 0, 1, 2, 3, 4, 5 without repetition is

(A) 240
(B) 216
(C) 120
(D) 96

Answer: (B) 216 · The council's preliminary key

Q392 AP EAMCET 2011 · 8 May · Offline MCQ

${}^{15}\mathrm{P}_8 = A + 8 \cdot {}^{14}\mathrm{P}_7 \Rightarrow A =$

(A) ${}^{14}\mathrm{P}_6$
(B) ${}^{14}\mathrm{P}_8$
(C) ${}^{15}\mathrm{P}_7$
(D) ${}^{16}\mathrm{P}_9$

Answer: (B) ${}^{14}\mathrm{P}_8$ · The council's preliminary key

Q393 AP EAMCET 2011 · 8 May · Offline MCQ

If ${}^{(n-1)}\mathrm{C}_3 + {}^{(n-1)}\mathrm{C}_4 > {}^{n}\mathrm{C}_3$, then the minimum value of n is

(A) 5
(B) 6
(C) 7
(D) 8

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

Q394 AP EAMCET 2010 · 30 May · Offline MCQ

Let $n = 1! + 4! + 7! + \ldots\ldots + 400!$. Then ten's digit of n is :

(A) 1
(B) 6
(C) 2
(D) 7

Answer: (B) 6 · Official APSCHE final key

Q395 AP EAMCET 2010 · 30 May · Offline MCQ

A polygon has 54 diagonals. Then the number of its sides is :

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(A) 7
(B) 9
(C) 10
(D) 12

Answer: (D) 12 · Official APSCHE final key

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