

Youth Competition Times

NTA-CSIR-NET/JRF

GENERAL APTITUDE : PART A

COMPULSORY PAPER

CHAPTERWISE

Solved Papers

(Also Useful for Other Competitive Examinations)

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Publisher Declaration

Edited and Published by A.K. Mahajan for YCT Publication Pvt. Ltd.
and printed by Roop Printing Press, Prayagraj. In order to publish the book,
full care has been taken by the editor and the publisher,
still your suggestions and queries are welcomed.

In the event of any dispute, the Judicial area will be Prayagraj

Rs. : 225/-

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EXAM PATTERN & SYLLABUS

Mode of Examinations: The Examinations will be conducted in Computer Based Test (CBT) mode.

Pattern of Question Papers: CSIR NET Examination Question Paper is divided into 3 PARTs– A, B, and C. Part A carries the questions of General Science and Research Aptitude. Topics covered in this part of General Aptitude like series formation, numerical ability, reasoning etc. This is common for all the candidates and papers whereas PARTs B & C are subject-specific. All the parts will consist of objective type, multiple choice questions. The pattern of the paper is a little different for each subject. Candidates have the choice to attempt the questions or ignore the questions in each section. There will be no break between papers. The subject-wise scheme of examination is as per details below:

LIFE SCIENCES				
	PART A	PART B	PART C	TOTAL
Total questions	20	50	75	145
Max No of Questions to attempt	15	35	25	75
Marks for each correct answer	2	2	4	200
Marks for each incorrect answer (Negative marking for part A, B & C is @ 25%)	0.5	0.5	1	-
CHEMICAL SCIENCES				
Total No. of Questions	20	40	60	120
Max No of Questions to attempt	15	35	25	75
Marks for each correct answer	2	2	4	200
Marks for each incorrect answer (Negative marking for part A, B & C is @ 25%)	0.5	0.5	1	-
PHYSICAL SCIENCES				
Total No. of Questions	20	25	30	75
Max No. of Questions to attempt	15	20	20	55
Marks for each correct answer	2	3.5	5	200
Marks for each incorrect answer (Negative marking for part A, B & C is @ 25%)	0.5	0.875	1.25	-
MATHEMATICAL SCIENCES				
Total questions	20	40	60	120
Max No of Questions to attempt	15	25	20	60
Marks for each correct answer	2	3	4.75	200
Marks for each incorrect answer (Negative marking in Part A & B is @ 25%; no negative marking in Part C)	0.5	0.75	0	-
EARTH, ATMOSPHERIC, OCEAN AND PLANETARY SCIENCES				
Total questions	20	50	80	150
Max No of Questions to attempt	15	35	25	75
Marks for each correct answer	2	2	4	200
Marks for each incorrect answer (Negative marking for part A & B is @ 25% and part C is @ 33%)	0.5	0.5	1.32	-

SYLLABUS - General Aptitude (Part-A)

Numerical Ability: Number and Simplification, LCM and HCF, Average, Quadratic Equations, Sequence and Series, Surds and Indices, Logarithms, Percentage, Profit and Loss, Simple Interest, Compound Interest, Ratio, Proportion and Variation, Partnership, Allegation and mixture, Time, Speed and Distance, Time and Work, Permutations and Combinations, Probability, Geometry, Mensuration, Trigonometry, etc.

Reasoning: Series Formation, Coding-Decoding, Distance and Directions, Calendar and Clock, Ranking and Arrangement, Logical Puzzles, etc.

Data Interpretation and Graphical Analysis: Mean Median, Mode, Measures of Dispersion, Graphical Analysis: Bar Graph, Line Graph, Pie-Chart, and Tabulation.

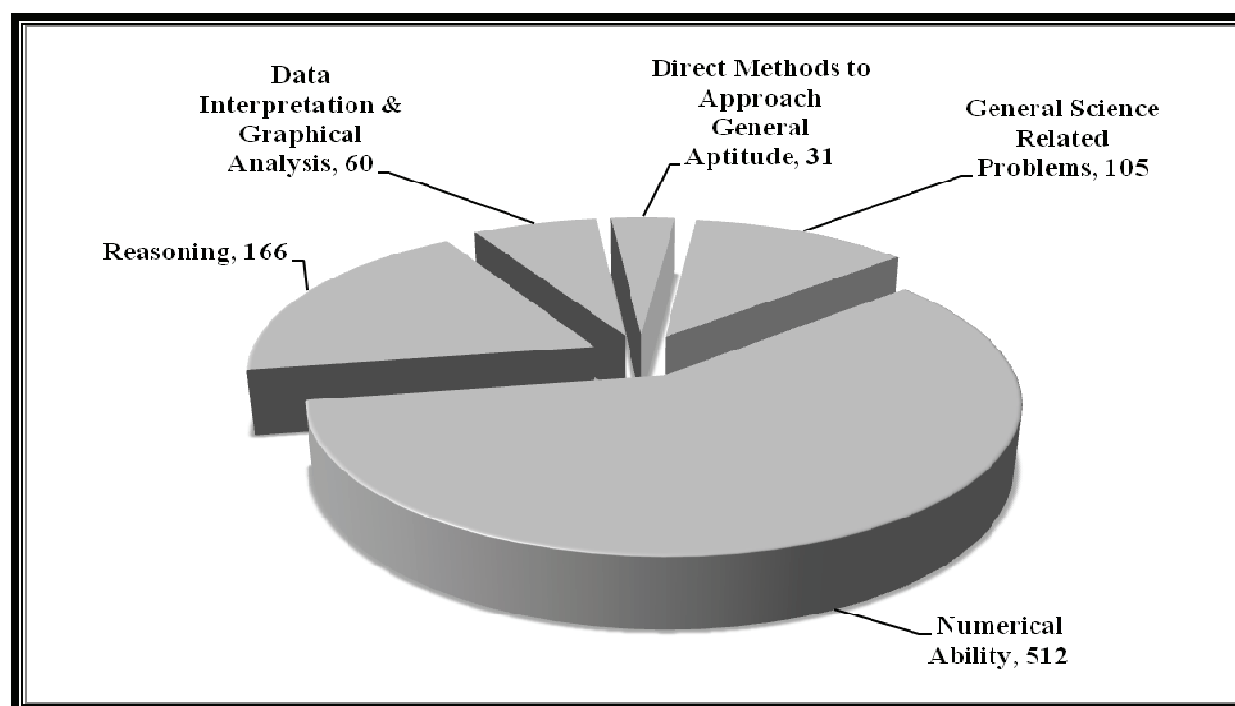
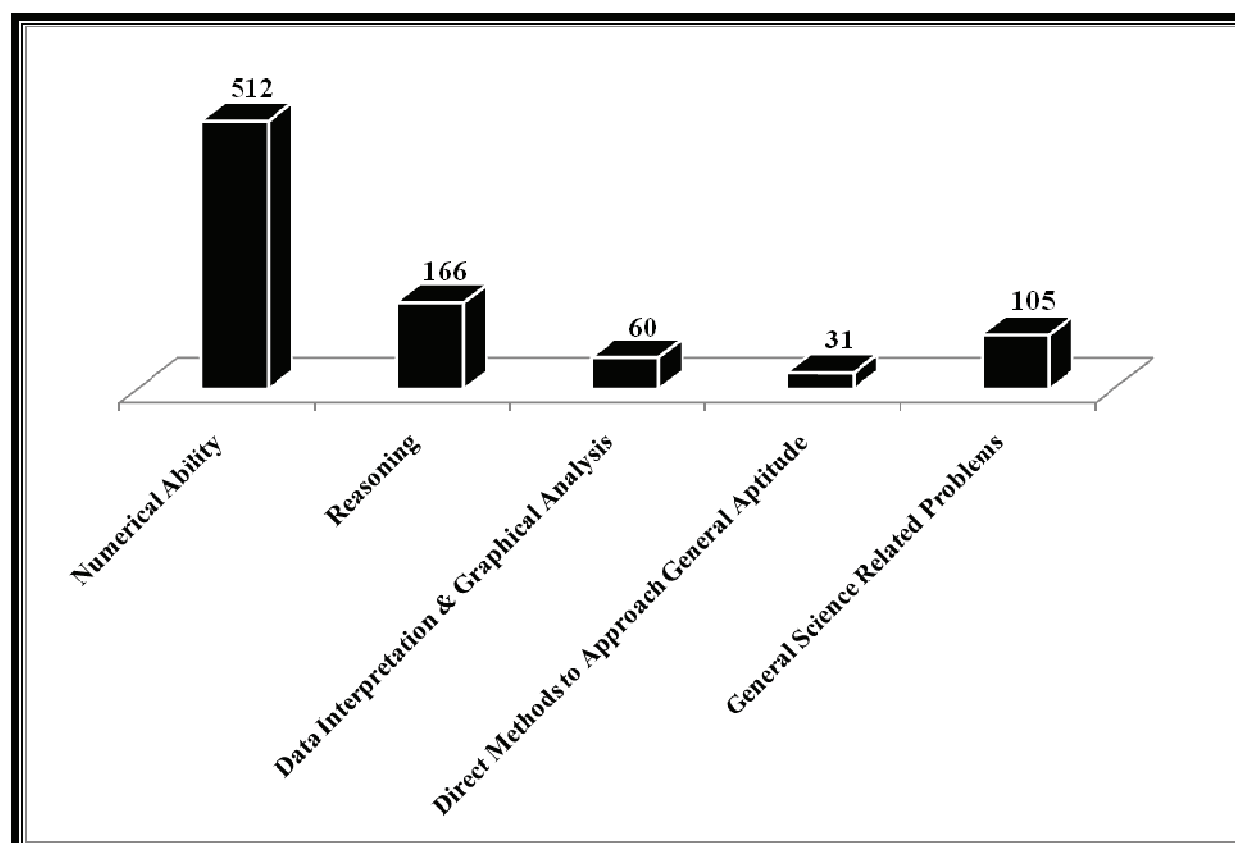
NTA CSIR NET EXAMINATION PREVIOUS YEAR PAPER ANALYSIS CHART

S. No.	Examination Question Paper	Exam Date/ Examination year	No. of Questions
NTA-Council of Scientific & Industrial Research (CSIR) NET			
2022			
1.	CSIR Life Sciences	17.02.2022 Shift-I	20
2.	CSIR Life Sciences	17.02.2022 Shift-II	20
3.	CSIR Chemical Sciences	16.02.2022 Shift -I	20
4.	CSIR Mathematical Sciences	16.02.2022 Shift -II	20
5.	CSIR Physical Sciences	15.02.2022 Shift - II	20
6.	CSIR Earth Atmospheric Ocean N Planetary Science	29.01.2022 Shift - II	20
2020			
7.	CSIR Chemical Sciences	30. 11. 2020 Shift- I	20
8.	CSIR Mathematical Sciences	30.11. 2020 Shift - II	20
9.	CSIR Chemical Sciences	26. 11. 2020 Shift- I	20
10.	CSIR Mathematical Sciences	26. 11. 2020 Shift - II	20
11.	CSIR Life Sciences	21.11.2020 Shift-I	20
12.	CSIR Life Sciences	21.11.2020 Shift-II	20
13.	CSIR Earth Atmospheric Ocean N Planetary Science	19.11.2020 Shift-I	20
14.	CSIR Physical Sciences	19.11.2020 Shift-II	20
2019			
15.	CSIR Mathematical Sciences, Chemical Sciences & Earth Sciences	15.12.2019 Shift-II	20
16.	CSIR Physical Sciences & Life Sciences	15.12.2019 Shift-I	20
17.	CSIR Mathematical Sciences, Chemical Sciences & Earth Sciences	June 2019	20
18.	CSIR Physical Sciences & Life Sciences	June 2019	20
2018			
19.	CSIR Mathematical Sciences, Chemical Sciences & Earth Sciences	December 2018	20
20.	CSIR Life Sciences & Physical Sciences	December 2018	20
21.	CSIR Mathematical Sciences, Chemical Sciences & Earth Sciences	June 2018	20
22.	CSIR Life Sciences & Physical Sciences	June 2018	20
2017			
23.	CSIR Mathematical Sciences, Chemical Sciences & Earth Science	December 2017	20
24.	CSIR Life Sciences & Physical Sciences	December 2017	20
25.	CSIR Mathematical Sciences, Chemical Sciences & Earth Science	June 2017	20
26.	CSIR Life Sciences & Physical Sciences	June 2017	20

2016			
27.	CSIR Mathematical Sciences, Chemical Sciences & Earth Sciences	December 2016	20
28.	CSIR Life Sciences & Physical Sciences	December 2016	20
29.	CSIR Mathematical Sciences, Chemical Sciences & Earth Sciences	June 2016	20
30.	CSIR Life Sciences & Physical Sciences	June 2016	20
2015			
31.	CSIR Mathematical Sciences, Chemical Sciences & Earth Sciences	December 2015	20
32.	CSIR Life Sciences & Physical Sciences	December 2015	20
33.	CSIR Mathematical Sciences, Life Sciences & Earth Sciences	June 2015	20
34.	CSIR Chemical Sciences & Physical Sciences	June 2015	20
2014			
35.	CSIR Mathematical Sciences, Life Sciences & Earth Sciences	December 2014	20
36.	CSIR Chemical Sciences & Physical Sciences	December 2014	20
37.	CSIR Mathematical Sciences, Life Sciences & Earth Sciences	June 2014	20
38.	CSIR Chemical Sciences & Physical Sciences	June 2014	20
2013			
39.	CSIR Mathematical Sciences, Life sciences & Earth Sciences	December 2013	20
40.	CSIR Chemical Sciences & Physical Sciences	December 2013	20
41.	CSIR Mathematical Sciences, Life Sciences & Earth Sciences	June 2013	20
42.	CSIR Chemical Sciences & Physical Sciences	June 2013	20
2012			
43.	CSIR Life Sciences & Chemical Sciences	December 2012	20
44.	CSIR Mathematical Sciences, Physical Sciences & Earth Sciences	December 2012	20
45.	CSIR Life Sciences	June 2012	20
2011			
46.	CSIR Life Sciences & Physical Sciences	December 2011	20
47.	CSIR Life Sciences & Physical Sciences	June 2011	20
Total			940

Note- After the analysis of the above question papers, a total of 940 (Repeated questions + Similar nature questions) questions related to General Aptitude have been placed below the name of the original questions, so that examinees can understand the nature of repetition of questions.

Trend Analysis of Previous Year Papers Through Bar Graph and Pie Chart



Chapter-1

NUMERICAL ABILITY

1.1 Number and Simplification

1. How many integers in the set $\{1, 2, 3, \dots, 100\}$ have exactly 3 divisors?

- (a) 4 (b) 12
(c) 5 (d) 9

CSIR-NET/JRF 15-02-2022 Shift-II

Ans. (a) : Method - I

The squares of the prime number are the only numbers that have exactly 3 divisors.

Therefore,

First prime number is 2 = 1, 2, 4

Second prime number is 3 = 1, 3, 9

Third prime number is 5 = 1, 5, 25

Fourth prime number is 7 = 1, 7, 49

The fifth prime number is 11 = 1, 11, 121 which is greater than 100.

Therefore, the number of natural number less than 100 which have exactly 3 divisors are 4, 9, 25, 49.

Method - II

Integers in set $\{1, 2, 3, \dots, 100\}$ have exactly 3 divisors.

Divisor function $(\sigma) = (\text{Power} + 1)$

$$2^2 = 2 + 1 [1, 2, 4]$$

$$3^2 = 2 + 1 [1, 3, 9]$$

$$5^2 = 2 + 1 [1, 5, 25]$$

$$7^2 = 2 + 1 [1, 7, 49]$$

So, only four integers from 1 to 100 having exactly 3 divisors.

2. The digit at the unit's place of $(489^{86} - 351^{63})$ is

- (a) 8 (b) 5
(c) 2 (d) 0

CSIR-NET/JRF 29-01-2022 Shift-II

Ans. (d) 1 on any power gives 1 at unit digit

9 has cyclicity of 2 i.e. 9 and 1.

9 having odd power gives 9 at unit digit.

9 having even power gives 1 at unit digit.

$$(489)^{86} - (351)^{63}$$

$$\underline{\quad}1 - \underline{\quad}1$$

So, unit digit is zero

3. Let m and n be two positive integers such that $m+n+mn = 118$. Then the value of $m+n$ is

- (a) not uniquely determined (b) 18
(c) 20 (d) 22

CSIR-NET/JRF 16-02-2022 Shift-II

CSIR-NET/JRF June 2015

Ans. (d) : $m + n + mn = 118$

$$m + n + mn + 1 = 118 + 1$$

$$m + 1 + n(m + 1) = 119$$

$$(m + 1)(n + 1) = 17 \times 7$$

Since this is a product of two prime number

$$\therefore (m + 1) = 17 \text{ or } 7$$

$$(n + 1) = 17 \text{ or } 7$$

on solving $m = 16$ or 6 and $n = 16$ or 6

$$\therefore m + n = 22$$

4. How many integers in the set $\{1, 2, 3, \dots, 100\}$ have an odd number of divisors?

- (a) 27 (b) 10
(c) 36 (d) 12

CSIR-NET/JRF 29-01-2022 Shift-II

Ans. (b): We know that all perfect squares have odd no. of factors. So Squaring integers from 1 to 10 we get 1, 4, 9, 16, 25, 36, 49, 64, 81, 100

Hence there are 10 numbers that have odd number of factors

5. Which of the following values is same as $2^{2^{22}}$?

- (a) 2^6 (b) 2^8
(c) 2^{16} (d) 2^{222}

CSIR-NET/JRF 17-02-2022 Shift-II

CSIR-NET/JRF June 2015

Ans. (c):

$$2^{2^{22}} \quad \left[\begin{array}{l} * \text{ last power } 2^2 \Rightarrow 4 \\ * \text{ Let } 2^4 \Rightarrow 16 \end{array} \right]$$

$$\Rightarrow 2^{2^4}$$

$$\Rightarrow 2^{16}$$

6. The square of a two digit number, with non-zero digits, is the number itself preceded by the digit C. Then C is

- (a) 1 (b) 2
(c) 4 (d) 6

CSIR-NET/JRF 16-02-2022 Shift-I

Ans. (d) : If we closely observe the question then we can conclude that, it follows the following eqⁿ -

$$(xy)^2 = Cxy$$

$\Rightarrow$ Square of a two digit number gives the same number preceded by C only possible with number 5 at unit digit place which on squaring gives 5 at unit digit place. So check two digit numbers ending with 5.

$$(a) \quad (15)^2 = 225 \neq C25$$

$$(b) \quad (25)^2 = 625 = C25$$

$$\therefore C = 6$$

7. The sum of the first n even numbers is

- (a) Divisible by n and not by $(n+1)$
- (b) Divisible by $(n+1)$ and not by n
- (c) Divisible by both n and $(n+1)$
- (d) Neither divisible by n nor by $(n+1)$

CSIR-NET/JRF 26-11-2020 Shift-II

Ans. (c) : The sum of the first n even numbers is $= n(n+1)$

Hence, this term is divisible by n and $(n+1)$.

8. If n is an even number, then the sum of the first n natural numbers is divisible by

- (a) Both n and $(n+1)$
- (b) n but not $(n+1)$
- (c) $(n+1)$ but not n
- (d) neither $(n+1)$ nor n

CSIR-NET/JRF 21-11-2020 Shift-II

Ans. (c) : $n =$ even number, Let $n = 4$

Sum of first 4 number $= 1 + 2 + 3 + 4 = 10$

Which is not divisible by n but divisible by $n+1$

Similarly $n = 6$

Sum of first 6 natural No $= 1 + 2 + 3 + 4 + 5 + 6 = 21$

It is not divisible by 6 but divisible by $6 + 1$

So series is divisible by $n+1$ but not divisible by n .

9. Which of the following numbers is a perfect square ?

- (a) 48841
- (b) 58287
- (c) 68763
- (d) 38262

CSIR-NET/JRF 19-11-2020 Shift-I

Ans. (a) : Condition of perfect square

(i) A perfect square always end with one of these numbers - 0, 1, 4, 5, 9. If number does not end with these numbers, then given number will not be a perfect square.

(ii) Perfect square always have digit summation of one of these numbers (1, 4, 7, 9). If it doesn't then it is not a perfect square.

only option (a) follow above conditions.

(a) 4 8 8 4 1 end with 1.

$4 + 8 + 8 + 4 + 1 = 25 = 2 + 5 = 7$

summation of digit is 7.

Both the condition follows hence option (a) is correct.

10. In a ten-digit mobile number 999ABCDEEE, A, B, C and D distinct prime number. The mobile number is never divisible by

- (a) 3
- (b) 4
- (c) 5
- (d) 8

CSIR-NET/JRF 19-11-2020 Shift-I

Ans. (a) : Given 10 digit mobile number- 999 ABCD EEE

$\therefore$ A, B, C, D are distinct Prime Number

$\therefore$ A, B, C, D can take values $\rightarrow 1, 3, 5, 7$ in any order.

Sum of 1st 7 number $= 9 + 9 + 9 + 1 + 3 + 5 + 7 = 43$

Now, for number to be divisible by '3' sum of all digit of a number must be divisible by 3.

Since, last three digits are same (as EEE), So it can take values - 111, 222, 333, 444, 555, 666, 777, 888, 999. But there is no such combination which on addition with 43 gives the sum which is divisible by 3

So mobile number is never divisible by 3.

11. Based on the clues given in statements A to D, find the correct 3-digit number.

- (a) two of the digits are present in the number 395, but they are not placed correctly.
- (b) One of the digits is present in the number 718 and is placed correctly.
- (c) None of the digits is present in the number 148.
- (d) One of the digits is present in the number 835 and is placed correctly.
- (a) 739
- (b) 735
- (c) 379
- (d) 359

CSIR-NET/JRF 26-11-2020 Shift-I

Ans. (a) :

(1) From statement B, one of digit is 7 which is placed at 100th place. i.e. $\underline{7} \underline{\quad} \underline{\quad}$ so option C & D is eliminated.

(2) From statement D & A one of digit is 3 which should be at tens place.

$\underline{7} \underline{3} \underline{\quad}$

(3) Digit at one's place can't be 5, because if 5 comes at one's place then statement A becomes wrong.

So, digit at one's place must be 9.

$\underline{7} \underline{3} \underline{9}$

$\therefore$ option (a) is correct.

12. Given that $K! = 1 \times 2 \times 3 \times \dots \times K$, which is the largest among the following

- (a) $(2!)^{1/2}$
- (b) $(3!)^{1/3}$
- (c) $(4!)^{1/4}$
- (d) $\frac{(3!)}{2}$

CSIR-NET/JRF 15-12-2019 Shift-II

Ans. (d) : Largest among the following -

$(2!)^{1/2} = 2^{1/2} = \sqrt{2} = 1.414$

$(3!)^{1/3} = 6^{1/3} = 1.86$

$(4!)^{1/4} = 24^{1/4} = 2.22$

$\frac{3!}{2} = \frac{6}{2} = 3$

So, largest value $\frac{3!}{2}$.

13. A two-digit number is such that if the digit 4 is placed to its right, its value would increase by 490. Find the original number

- (a) 48
- (b) 54
- (c) 64
- (d) 56

CSIR-NET/JRF 15-12-2019 Shift-II

Ans. (b) : Let consider two digit number = xy

When 4 is placed to its right side = $xy4$

Value increase by 490

$$10x+y+490 = 100x+10y+4$$

$$90x+9y = 486$$

$$9(10x+y) = 486$$

$$10x+y = 54$$

So, two digit number is = 54.

14. Which of the following is the largest?

$$2^{50}, 3^{40}, 4^{30}, 5^{20}$$

- (a) 2^{50} (b) 3^{40}
(c) 4^{30} (d) 5^{20}

CSIR-NET/JRF June 2019

Ans. (b) : greatest or largest of $2^{50}, 3^{40}, 4^{30}, 5^{20}$ is -

$$a^{bm} = (a^b)^m$$

$$2^{50} = (32)^{10}$$

$$3^{40} = (81)^{10}$$

$$4^{30} = (64)^{10}$$

$$5^{20} = (25)^{10}$$

So from given condition power of all the number is same then base having maximum value is maximum among all so 3^{40} is largest.

15. The difference between the squares of two consecutive integers in 408235. The sum of the numbers is

- (a) 16324 (b) 27061
(c) 180235 (d) 408235

CSIR-NET/JRF 15-12-2019 Shift-I

Ans.: (d) Given – difference between square of two consecutive integers is 408235

Let consider two number is = $a, a + 1$

$$(a+1)^2 - a^2 = 408235$$

$$a^2 + 1 + 2a - a^2 = 408235$$

$$2a + 1 = 408235$$

So,

$$a + a + 1 = 408235$$

$$a + (a + 1) = 408235$$

So sum of number is 408235

16. The number of digits you have to type to write all the page numbers of a book starting from 1 (first page) is 2019. What is the number of pages is that book?

- (a) 609 (b) 610
(c) 709 (d) 710

CSIR-NET/JRF June 2019

Ans. (c) : In given question,

The number of total digits = 2019 digits

1 to 9 → 9 Numbers or pages = 9 digits

10 to 99 → 90 Numbers or pages = $2 \times 90 = 180$ digits

Hence : $2019 - (180 + 9) = 1830$ digits

So that $\frac{1830}{3} = 610$ Number or Pages

Total pages = $9 + 90 + 610$

709 pages

17. If $D = ABC + BCA + CAB$ where A, B and C are decimal digits, then D is divisible by

- (a) 1.37 and 29 (b) 37 but not 29
(c) 29 but not 37 (d) neither 29 nor 37

CSIR-NET/JRF Dec. 2018

Ans. (b) $D = ABC + BCA + CAB \dots(i)$

∴ A, B, C, are decimal digits

$$\therefore ABC = 100A + 10B + C$$

$$\therefore BCA = 100B + 10C + A$$

$$\therefore CAB = 100C + 10A + B$$

Put value in eqⁿ (i)

$$\begin{aligned} D &= (100A + 10B + C) + (100B + 10C + A) + (100C + 10A + B) \\ &= 100(A + B + C) + 10(A + B + C) + (A + B + C) \\ &= (100 + 10 + 1)(A + B + C) \end{aligned}$$

$$D = 111(A + B + C)$$

So, 111 is divisible by 37 but not 29.

So D is divisible by 37 but not 29.

18. When a farmer was asked as to how many animals he had, he replied that all but two were cows, all but two were horses and all but two were pigs. How many animals did he have?

- (a) 3 (b) 6
(c) 8 (d) 12

CSIR-NET/JRF June 2018

Ans. (a) :

- All but two were cows means: he had two other animals including cows.
- All but two were horses means: he had two other animals including horses.
- All but two were pigs means he had two other animals including pigs.

The total animals are:

$$1 \text{ Cow} + 1 \text{ Horse} + 1 \text{ Pig} = 3$$

In this case only three animals are mentioned and in each case we have but only two to represent the other animals he had.

This means that we had one type of animal for every variety.

19. What is the last digit of $(2017)^{2017}$?

- (a) 1 (b) 3
(c) 7 (d) 9

CSIR-NET/JRF June 2018

Ans. (c) : Last digit of $(2017)^{2017}$

In the given number last number is 7 so we have to find 7^{2017} at unit place is equal to 2017^{2017} .

We know that

$$7^1 = 7$$

$$7^2 = 49$$

$$7^3 = 343$$

$$7^4 = 2401$$

$$7^5 = 16807$$

$$7^6 = 117649$$

$$7^7 = 823543$$

$$7^8 = 5764801$$

So the unit place cycle repeat after every 4th power of 7.

So that $7^{2017} = ((504) \times 4 + 1)$

So unit place = $7^1 = 7$

Unit place or last digit of $(2017)^{2017}$ is 7.

20. It is given that, for any real number a,

$$(a)^* = a \text{ if } a > 0$$

$$= 0 \text{ if } a \leq 0$$

Suppose for two real number x and y, $(xy)^* = (x)^*(y)^*$.

Then which of the following is necessarily true?

(a) $x > 0$ and $y > 0$.

(b) $\{x < 0 \text{ and } y < 0\}$ or $\{x > 0 \text{ and } y > 0\}$

(c) $\{x \leq 0 \text{ and } y \leq 0\}$ or $\{x \geq 0 \text{ and } y \geq 0\}$

(d) $\{x \geq 0\}$ or $\{y \geq 0\}$ or $\{x \geq 0 \text{ and } y \geq 0\}$

CSIR-NET/JRF June 2018

Ans. (d) : $(xy)^* = (x)^*(y)^*$

$(xy)^*$ can take two values; either $(xy)^* = 0$ or

$$(xy)^* = xy, \text{ since } (a)^* = \begin{cases} a & \text{if } a > 0 \\ 0 & \text{if } a \leq 0 \end{cases}$$

$$\text{Case 1 : } (xy)^* = 0 = (x)^*(y)^*$$

$$\Rightarrow xy \leq 0$$

$$\Rightarrow (x \leq 0 \text{ and } y \geq 0) \text{ or } (x \geq 0 \text{ and } y \leq 0) \rightarrow (I)$$

$$\text{Case 2 : } (xy)^* = xy = (x)^*(y)^*$$

$$\Rightarrow (x \geq 0 \text{ and } y \geq 0) \text{ or } (x \leq 0 \text{ and } y \leq 0) \rightarrow (II)$$

Combining condition in (I) and (II), the expression $(xy)^* = (x)^*(y)^*$ is true for all real number x and y. The options (a), (b) and (c) limits the values x, y can take to some real numbers. While option (d) covers all real numbers.

21. Consider a number 54 expressed in a base different from 10. What is the base of this number system if its equivalent value in the decimal system is 49?

(a) 1

(b) 3

(c) 6

(d) 9

CSIR-NET/JRF June 2018

Ans. (d) : Let $(54)_r = (49)_{10}$

$$\therefore 5r + 4 = 49$$

$$5r = 45$$

$$r = 9$$

So base is 9 for Number, $(54)_9 = (49)_{10}$

22. For which of the following numbers is its positive square root closest to the number itself?

(a) 0.33

(b) 0.99

(c) 0.89

(d) 0.10

CSIR-NET/JRF Dec. 2017

Ans. (b) :

Take square root of respective options -

for 0.33, square root value = 0.57

for 0.99, square root value = 0.99

for 0.89, square root value = 0.94

for 0.10, square root value = 0.31

From above, we can see, the square root of = 0.99 most closest to the number itself.

23. The sum of two numbers is equal to sum of square of 11 and cube of 9. The larger number is 5^2 less than square of 25. What is the value of the sum of twice of 24 percent of the smaller number and half of the larger number?

(a) 415

(b) 400

(c) 410

(d) 420

CSIR-NET/JRF Dec. 2017

Ans. (d) :

Let the bigger number be x and the smaller be y.

$$x + y = 11^2 + 9^3 = 121 + 729 = 850$$

$$\text{Bigger number is } x = 25^2 - 5^2 = 625 - 25 = 600$$

$$\text{So the smaller number } y = 850 - 600 = 250$$

Twice the 24% of the smaller number

$$= 2 \times (24/100) \times 250 = 120$$

Half of the larger number = 300

$$\text{Sum of these two} = 120 + 300 = 420.$$

24. N is a two-digit number such that the product of its digits when added to their sum = N. The unit digit of N would be:

(a) 1

(b) 7

(c) 8

(d) 9

CSIR-NET/JRF June 2017

Ans. (d) : Given - N is a two digit number .

$$\text{Let } N = xy$$

where x is tens digit and y is unit digit number

$$\text{So, } N = 10x + y$$

$$\therefore \text{Product of the digits} + \text{Sum of the digits} = N$$

$$\therefore xy + x + y = 10x + y$$

$$xy = 9x$$

$$\boxed{y = 9} \text{ So, unit digit is 9.}$$