29 December 2023 05:36 PM

GIPE – (MCQ) in offline.

1. Duration → 120 min (2 hrs)
2. No. of ques → 100 Questions
3. each correct answer → 1 marks
4. No negative marking.
5. Section A → Mathematical Aptitude (40 marks)

[Number system, Sets, Arithmetic, Algebra, Permutation & combination, Basic Statics & graphs]

Section B → Analytical Ability and Reasoning (40 marks)

[Numbers series, Coding-Decoding, Blood Relations, Direction, Clock Sitting Arrangements, Alphabet test]

Section C → English (Language) (20 marks)

[Reading Comprehension, Vocabulary, editing and omission.]

Symbiosis Entrance Exam (SET) → 60 Questions in 60 min (1 hour)
→ No negative marking.

① General awareness (16 marks)

[✓ current Affairs both national and international
✓ Static GK questions like currencies, capitals, Books and authors.]

[✓ Questions based on Economics, finance
✓ Also different questions on appointments, Agreements and constitutions.]

② Quantitative Technique (16 marks)

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(Matrix and Determinants, Percentage, Profit & Loss, Time and work, Ratio and Proportions, Mensuration)

③ Logical Reasoning (12 marks)

④ General English (16 marks)

Number System :

① Natural Numbers
ex 1, 2, ... (counting numbers)

② Integers
ex . . . , −3, −2, −1, 0, 1, 2, 3, ...

③ Even Numbers (divisible by 2)
−6, −4, −2, 0, 2, 4, 6, 8 . . . .

④ Odd Numbers (Not exactly divisible by 2)
−7, −5, −3, −1, 1, 3, 5, 7, ...

⑤ Prime numbers (two positive factors i.e. 1 and the number itself)

2, 3, 5, 7, 67, 13 . . . .

9, 25 ⇒ these numbers are odd numbers which are not prime

9, 25 ⇒ these numbers are odd ... which are not prime numbers.

* All odd numbers are not a prime number.

Method 1: Testing a prime number.

(*) Let p be a given number and let n be the smallest natural number such that

$n^2 \geq p$

Now, test whether p is divisible by any of the prime number less than or equal to n.

If yes then p is not prime.

Ex: Check whether 67 is a prime number.

Here 9 is the smallest natural number such that $9^2 > 67$

Now prime numbers less than 9 are 2, 3, 5 and 7.

Since 67 is not divisible by 2, 3, 5 and 7

∴ 67 is a prime number

(b) 111 → prime number

$121 > 111$

$2\lfloor 240$

121 > 111

11² > 111 → 2, 3, 5, 7,

Method 2 : Prime factorisation

ex: ① prime factorisation of 240

2	240
2	120
2	60
2	30
3	15
5	5
	1

② $3150 \rightarrow 2 \times 3^2 \times 5^2 \times 7$

2	3150
5	1575
5	315
7	63
3	9
3	3
	1

⑥ Composite Numbers

↳ No. which are not prime numbers.

⑦ Perfect squares

ex: 4, 9, 36, 49, 64, - - - 100, 121, ...

Properties: ① A sq no. never ends with 2, 3, 7, 8

② No perf sq ends with an odd no. of zeros.

③ Upon prime factorisation all their prime factors have <u>even</u> multiplicities.

3	900
3	300
5	100
5	20
2	4
	2

ex: $900 = 3^2 \times 5^2 \times 2^2$

Test of Divisibility

1. by 2 → last digit is even i.e 0, 2, 4, 6, or 8.
2. by 3 → sum of its digits divisible by 3
3. by 4 → no. formed by last 2 digits is divisible by 4.
4. by 5 → last digit is 0 or 5.
5. by 6 → if a number is divisible by both 2 and 3.
6. by 7 → substract twice the unit digit from the number represented by the remaining digits of the number to obtain an integer.
   Now the original number is divisible by 7 if the obtained integer is divisible by 7.

Ex: 343 → step1 → unit digit is 3
step2 → " × 2 = $3 \times 2 = 6$
step3 → $34 - 6 = 28$
step4 → 28 is divisible by 7
∴ 343 is divisible by 7

8. by 8 → number formed by the last 3 digits is divisible by 8.
9. by 9 → if sum of the digits is divisible by 9.

(9) by 9 → if sum of digits ...

(10) by 10 → if the number ends with 0.

(11) by 11 → if the difference of sum of the digits in the even and odd position in the number is divisible by 11.

ex: 979 divisible by 11? Yes

sum of odd position = 9+9 = 18

sum ... even " = 7

difference = 18 - 7 = 11 divisible by 11

✓ ✗.

(*) Greatest Common Divisor (GCD or HCF)

Q Hcf of 504 and 264

✓ prime factors of 504 $= 2^3 \times 3^2 \times 7$

✓ " " of 264 $= 2^3 \times 3 \times 11$

$2 \,|\, 264$, $2 \,|\, 132$, $3 \,|\, 66$, $2 \,|\, 22$, 11

$2 \,|\, 504$, $2 \,|\, 252$, $2 \,|\, 126$, $3 \,|\, 63$, $7 \,|\, 21$, 3

∴ HCF of 264 and 504 $= 2^3 \times 3$
$= 8 \times 3 = 24$ (ans).

LCM of 504 and 264 $= 2^3 \times 3^2 \times 7 \times 11$
$= 5544$ (ans)

Properties

... GCD &

Properties

1. Product of two no. = Prod of GCD & LCM
2. HCF of given no always divides their LCM
3. HCF of given fraction = $\frac{\text{GCF of Num}}{\text{LCM of Denominator}}$
4. LCM of given fraction = $\frac{\text{LCM of Numerator}}{\text{HCF of Denominator}}$

— x —