

QUANTITATIVE APTITUDE

1. (1) The average number of persons who have taken the insurance policy excluding in the year 2012

$$= \frac{54 + 65 + 72 + 84 + 85}{5}$$

$$= \frac{360}{5} = 72$$

2. (4) We know that.
H.C.F of two number \times
L.C.M of two number = 1st
number \times 2nd number

ATQ,
 $21 \times 840 = 49 \times 2^{\text{nd}} \text{ number}$

$$2^{\text{nd}} \text{ number} = \frac{21 \times 840}{49}$$

$$= 360$$

3. (3) Scheme-I: Two successive discounts of 15% and 25%
So, Total discount is

$$= +15+25 - \frac{15 \times 25}{100}$$

$$= 40 - \frac{15}{4} = \frac{160 - 15}{4}$$

$$= \frac{145}{4} = 36 \frac{1}{4} \%$$

Scheme-II: Buy 5, get 3 free.
Profit of customers

$$= \frac{3}{8} \times 100 = 60\% = 37.5$$

Scheme-III By 4, get 6.
Profit of customers

$$= \frac{2}{6} \times 100$$

$$= 50\% = 33.3$$

So, Scheme-II is the best for customers.

4. (1) Ratio of C.P and S.P is 10 : 11
1 unit

\therefore Required profit percentage

$$= \frac{1}{10} \times 100 = 10\%$$

5. (1)	Anju	:	Bitt
	Efficiency	130	: 100
		13	: 10
	Time	10	: 13

Anju alone can do the job in 23 days. So, The total work = $13 \times 23 = 299$

If they working together, then they can complete the work in

$$= \frac{299}{23}$$

(\therefore Total efficiency = 23)
= 13 days.

6. (1) Let u and v are the speed of boat and speed of stream respectively.

The upstream speed = $u - v$

The downstream speed = $u + v$

ATQ,

$$\frac{25}{u - v} + \frac{39}{u + v} = \text{-----(i)}$$

$$\frac{35}{u - v} + \frac{52}{u + v} = 11 \text{----(ii)}$$

Divide the equation (i) by 3 and equation (ii) by 4 and then subtract equation (ii) from (i)

$$\Rightarrow \frac{25}{3(u - v)} - \frac{35}{4(u - v)} = \frac{8}{3} - \frac{11}{4}$$

$$= \frac{32 - 33}{4}$$

$$\Rightarrow \frac{100}{u - v} - \frac{105}{u - v} = -1$$

$$\Rightarrow \frac{5}{u - v} = 1$$

$$\Rightarrow u - v = 5 \text{----(iii)}$$

Substitute the equation (iii) in equation (i).

$$\Rightarrow \frac{25}{5} + \frac{39}{u + v} = 8$$

$$\Rightarrow 5 + \frac{39}{u + v} = 8$$

$$\Rightarrow \frac{39}{u + v} = 3$$

$$\Rightarrow u + v = 13 \text{----(iv)}$$

Now, subtract equation (iii) from (iv) we get,

$$\Rightarrow 2v = 8$$

$$\Rightarrow u = 4$$

\therefore The speed of stream is 4 km/ph.

7. (1) Given, $\text{Cosec}\theta + \cot\theta = P$,

Now, $\frac{P^2 - 1}{P^2 + 1}$

$$= \frac{(\text{Cosec}\theta + \cot\theta)^2 - 1}{(\text{Cosec}\theta + \cot\theta)^2 + 1}$$

$$= \frac{\text{Cosec}^2\theta + \cot^2\theta + 2\text{Cosec}\theta.\cot\theta - 1}{\text{Cosec}^2\theta + \cot^2\theta + 2\text{Cosec}\theta.\cot\theta + 1}$$

$$= \frac{2\cot^2\theta + 2\text{cosec}\theta.\cot\theta}{2\cos^2\theta + 2\text{cosec}\theta.\cot\theta}$$

[$\therefore \text{cosec}^2\theta - 1 = \cot^2\theta$
and, $1 + \cot^2\theta = \text{cosec}^2\theta$]

$$= \frac{2\cot\theta (\cot\theta + \text{cosec}\theta)}{2\text{cosec}\theta (\text{cosec}\theta + \cot\theta)}$$

$$= \frac{\cos\theta}{\sin\theta} \times \sin\theta = \cos\theta$$

8. (1) We know that, $\frac{M_1 D_1 H_1}{W_1}$

$$= \frac{M_2 D_2 H_2}{W_2}$$

ATQ, $\frac{10}{240} = \frac{25}{W_2}$

$$W_2 = \frac{25 \times 240}{10}$$

$$= 600$$

9. (4) Given,

$$m + \frac{1}{m - 2} = 4$$

$$(m - 2) + \frac{1}{(m - 2)} = 2$$

Then, we can say that $(m - 2) = 1$

Now, $(m - 2)^2 + \frac{1}{(m - 2)^2}$

$$= 1 + 1 = 2$$

10. (3) $\cos 2A \cos 2B + \sin^2(A - B) - \sin^2(A + B)$.

Putting

$$A = 45^\circ, B = 15^\circ$$

$$= \cos(2 \times 45^\circ) \cos(2 \times 15^\circ) + \sin^2(45^\circ - 15^\circ)$$

$$= \cos 90^\circ \cos 30^\circ + \sin^2 30^\circ - \sin^2 60^\circ$$

$$= 0 \times \frac{\sqrt{3}}{2} + \frac{1}{4} - \frac{3}{4} = \frac{-1}{2}$$

$$\begin{aligned} \text{Now, } \cos(2A+2B) &= \cos(90^\circ+30^\circ) \\ &= \frac{-1}{2} \end{aligned}$$

11. (1) $5x - \frac{5}{x} + 6 = 0$

$$\Rightarrow 5x - \frac{5}{x} = -6$$

$$\Rightarrow x - \frac{1}{x} = \frac{-6}{5}$$

$$\text{then, } x^2 + \frac{1}{x} = \left(-\frac{6}{5}\right)^2 + 2$$

$$= \frac{36}{25} + 2$$

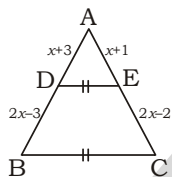
$$= \frac{36+50}{25} = \frac{86}{25}$$

12. (3) We know that any number that can be divided by a, b, c and d is always a multiple of L.C.M (a, b, c and d)

So, L.C.M of 3, 4, 5 and 7 is 420 on dividing 35460 by 420, the remainder is 180.

$$\therefore \text{The number to be added} = 420 - 180 = 240$$

13. (3)



We know that

$$\frac{AD}{AB} = \frac{AE}{AC}$$

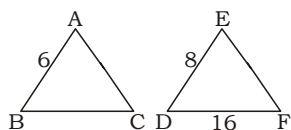
$$\text{then, } \frac{x+3}{3x} = \frac{x+1}{3x-1}$$

$$\Rightarrow 3x^2 - x + 9x - 3 = 3x^2 + 3x$$

$$\Rightarrow 5x = 3$$

$$\Rightarrow x = \frac{3}{5}$$

14. (1)



We know that

$$\triangle ABC \sim \triangle EDF$$

$$\text{then, } \frac{AB}{BC} = \frac{ED}{DF}$$

$$\Rightarrow \frac{6}{BC} = \frac{8}{16}$$

$$\Rightarrow BC = 12.$$

15. (3) Given,

The diameter of the base of a cone = 14m

The radius of the conical tent (r) = 7m.

Slant height of the conical tent (l) = 9m.

So, the area of tent cloth = $\pi r l$

$$= \frac{22}{7} \times 7 \times 9$$

$$= 198\text{m}$$

So, the required 2-m wide

$$\text{cloth is } = \frac{198}{2} = 99\text{ m}$$

16. (3) $a = 26, b = 22$

$$\text{Now, } \frac{a^3 - b^3}{a^2 - b^2} = \frac{3ab}{a+b}$$

$$= \frac{(a-b)(a^2 + b^2 + ab)}{(a-b)(a+b)} = \frac{3ab}{a+b}$$

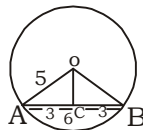
$$= \frac{a^2 + b^2 + ab}{a+b} = \frac{3ab}{a+b}$$

$$= \frac{a^2 + b^2 - 2ab}{a+b}$$

$$= \frac{(a-b)^2}{a+b} = \frac{(4)^2}{48} = \frac{16}{48} = \frac{1}{3}$$

17. (4) Total budget allocation for education in all the states = $225 + 75 + 250 + 425 + 535 = 1510$

18. (1)



$$OC = \sqrt{5^2 - 3^2}$$

$$= \sqrt{25 - 9}$$

$$= \sqrt{16} = 4$$

19. (3) K_1 = The value of average GDP of country A in all the 5 years

$$= \frac{175 + 200 + 150 + 75 + 50}{5}$$

$$= \frac{650}{5} = 130$$

K_2 = The value of average GDP of country B in all the 5 years

$$= \frac{285 + 300 + 125 + 85 + 95}{5}$$

$$= \frac{890}{5} = 178$$

The value of $(K_1 + K_2)$ = $130 + 178 = 308$

20. (4) $\tan 27^\circ \tan 34^\circ \tan 34^\circ \tan 29^\circ + \tan 29^\circ \tan 27^\circ$

We know that if $a+b+c = 90^\circ$ then $\tan a \tan b + \tan b \tan c + \tan c \tan a = 1^\circ$

So, $\tan 27^\circ \tan 34^\circ + \tan 34^\circ \tan 29^\circ + \tan 29^\circ \tan 27^\circ = 1$

21. (1) Angle described by the minute hand in 1 minute = 6° (Since in 60 minutes, the angle described Angle

described by the minute hand in 45 minute = $45 \times 6^\circ = 270^\circ$

So, Area swept by the minute hand in 45 minutes

$$= \frac{\theta}{360^\circ} \times \pi r^2$$

$$= \frac{270^\circ}{360^\circ} \times \frac{22}{7} \times (20)^2$$

$$= \frac{270}{360} \times \frac{22}{7} \times 20 \times 20 = \frac{6600}{7}$$

22. (3) Number of students who scored marks between 20 and 30 = Less than 30 - Less than 20 = $6 - 5 = 1$

23. (2) In this type of question of installment in simple interest, the installment amount will always be reduced from principle and the interest will be calculated on the remaining principal.

Principle for first year = 1,00,000

Simple interest for first year = $\frac{100000 \times 10 \times 1}{100} = 10,000$

$$= \frac{100000 \times 10 \times 1}{100} = 10,000$$

Remaining amount after first installment is paid = $(110,000 - 10,000) = 100,000$
Principle for second year = 1,00,000

Simple interest for second year

$$= \frac{100,000 \times 10 \times 1}{100} = 10,000$$

Remaining amount after second installment is paid = $(110,000 - 20,000) = 90,000$

Principle for third year = 90,000

Simple interest for third year

$$= \frac{90,000 \times 10}{100} = 9,000$$

Remaining amount after third year $(99,000 - 30,000) = 69,000$.

Principle for fourth year = 69,000

Simple interest for fourth year

$$= \frac{69,000 \times 10}{100} = 6900$$

Remaining amount after fourth year = $75900 - 40000 = 35900$

Principle for fifth year = 35900

Simple interest for fifth year

$$= \frac{35900 \times 10 \times 1}{100} = 3590$$

The end of the fifth year to clear the debt 39490.

24. (3) Average of six numbers is 3.52

Sum of six numbers is $3.52 \times 6 = 21.12$

Average of two numbers is 3.7

Sum of two numbers is $= 3.7 \times 2 = 7.4$

Average of other two numbers = 2.5

Sum of two numbers = $2.5 \times 2 = 5.0$

Sum of four numbers = $7.4 + 5 = 12.4$

Sum of remaining two numbers = $21.12 - 12.4 = 8.72$

Average of remaining two

$$\text{numbers} = \frac{8.72}{2} = 4.36$$

25. (3) Hyderabad → Madras CP at Madras

$$= M \times \frac{75}{100} = \frac{3M}{4}$$

Profit percentage = 10%
ATQ,

$$M - \left(\frac{3M}{4} + 100 \right)$$

$$= \left(\frac{3M}{4} + 1000 \right) \frac{10}{100}$$

$$\Rightarrow M = \left(\frac{3M + 4000}{4} \right) \times \frac{11}{10}$$

$$\Rightarrow 40M = 33M + 44000$$

$$\Rightarrow 7M = 44000$$

$$\Rightarrow M = 6285.7$$

1. (1) 2. (4) 3. (3) 4. (1) 5. (1)
6. (1) 7. (1) 8. (1) 9. (4) 10. (3)
11. (1) 12. (3) 13. (3) 14. (1) 15. (3)
16. (3) 17. (4) 18. (1) 19. (3) 20. (4)
21. (1) 22. (3) 23. (2) 24. (3) 25. (3)

GENERAL AWARENESS

1. (2) Communist:-eliminating socioeconomic class struggles by creating a class less society in which everyone shares the benefits of labour and the state controls all property and wealth.

Democratic:- people have the authority to deliberate and decide legislation (Direct democracy)

Oligarchic:- A small group of people having control of a country.

2. (3) Ladakh became a union territory on 31st of October 2019.

Lt Governor of Ladakh is RK Mathur.

Ladakh Lok Sabha seat - 1

3. (3) Tarun Bhattacharya , Bhajan Sopori Shivkumar Sharma and Satish Vyas are Santoor players.

4. (3)

5. (1) Open market operations refer to central bank purchases or sales of government

securities in order to expand or contract money in the banking system and influence interest rates.

6. (2) Antoine Lavoisier - discovered the role, of played by oxygen in combustion.

7. (1) Potassium Manganite - K_2MnO_4
Lead Nitrate $Pb(NO_3)_2$
Lead Sulphate - $PbSO_4$

8. (2)

9. (3) Hirakund - Aluminium & copper company

Hirakund Dam is built across the Mahanadi river about 15 km in Odisha.

Naharkatiya is well known for petroleum and gas reserves dibrugarh Assam.

Kakrapar is Atomic power station in Gujrat, established on 5th May 1993.

Tatipaka - Oil Refinery in Andhra Pradesh.

10. (1) The only time this is different is when both you and your opponent have won three points each and the score is 40-40. This is called deuce. When the score reaches deuce, one player or team will need to win at least two points in a row to win the game. When the server wins the deuce point, it is called Ad-In, but when they lose the deuce point, it is called Ad-Out. If the team with the advantage (Ad-In or Ad-Out) wins another point, they win the game, or it goes back to deuce.

11. (3)

12. (2) Wular Lake - Kashmir, is 2nd largest fresh water lake of Asia.

Vembanand lake - Kerala, fresh water lake, the longest lake of India.

Chilka lake - Odisha, brackish water lake.

Naini lake - Uttarakhand, naturally fresh water lake.

13. (4) Avogadro also hypothesized that equal volumes of gases, at the same temperature and pressure, contain equal numbers of molecules.

Avogadro number - 6.023×10^{23}

14. (1) Kingdom - Animalia
Phylum - Chordata
Class - Reptilia
Order - Squamata
Suborder - Serpentes
Family - Boidae
Genus - Eunectes
Species - E. murinus
Binomial name - Eunectes murinus

15. (3) The first Common Wealth Games was hosted in Hamilton, Canada in 1930. 2026 Commonwealth Games will be hosted in Victoria, Australia.

16. (4)

17. (3) 1767 - First Anglo War
1757 - Battle of Plassy
1774 - Rohilla War

18. (1) Agnipath Scheme :- Launches on 14th June, 2022 under this, youth will be recruited in all the three services (Army, Navy, Airforce) for 4 years and they will be called Agniveer. Lieutenant general Anil Chauhan is CDS of India. Chief of the Army staff - General Manoj Pandey
Chief of the Naval Staff - Admiral R Hari Kumar.
Chief of the Air force → Air Chief Marshal Vivek Ram Chaudhari.

19. (3) 40 tons of methyl isocyanate gas was leaked from a pesticide plant in Bhopal, India on 3 Dec 1984.

20. (1) The legend Vempati Chinna Satyam was awarded Padma Bhushan in 1998 and Sangeet Natak Akademi follow ship in 1967.

21. (1)

22. (1) Andhra Pradesh - Kolleru, Pulicat, Cumbum Lake, Hussain Sagar, Osman Sagar

Tamil Nadu - Chembarambakkam, Veeranam, Kolavai, Valankulam

Karnataka - Ulsoor, Hebbal, Karanji

Kerala - Vembanad, Ashtamudi, Kayamkulam, Vellayani

23. (2)

24. (2) The right to be forgotten (RTBF) is an inherent part of privacy which is linked to article 21 of Indian constitution. The RTBF is an evolving fundamental right of India.

25. (4)

→ The name 'India' is originally derived from the name of the river Sindhu (Indus River).

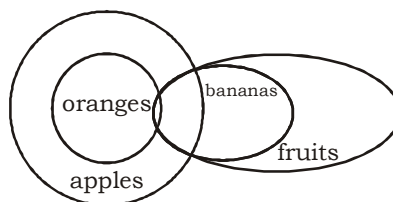
→ Indus River, Tibetan and Sanskrit Sindhu or Mehran, Great Trans-Himalayan river of South Asia. It is one of the longest rivers in the world with a length of approx. 2,000 miles (3,200 km).

1. (2) 2. (3) 3. (3) 4. (3) 5. (1)
6. (2) 7. (1) 8. (2) 9. (3) 10. (1)
11. (3) 12. (2) 13. (4) 14. (1) 15. (3)
16. (4) 17. (3) 18. (1) 19. (3) 20. (1)
21. (1) 22. (1) 23. (2) 24. (2) 25. (4)

GENERAL INTELLIGENCE & REASONING

1. (2) Rotated anticlockwise 45° and 90° respectively.

2. (3)



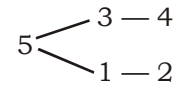
3. (3) $7 \times 8 \div 4 + 2 - 6 = 49$
interchanging + and ÷
 $\Rightarrow 7 \times 8 + 4 \div 2 - 6 = 49$
 $\Rightarrow 56 + 2 - 6 = 49$

$$\Rightarrow 56 - 4 = 49$$

$$\Rightarrow 52 = 49 \text{ is not correct.}$$

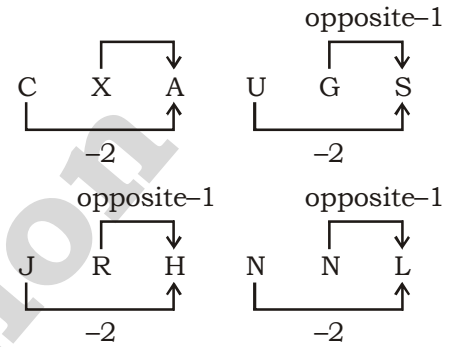
4. (4)

5. (2) From fig. (1) and (3)

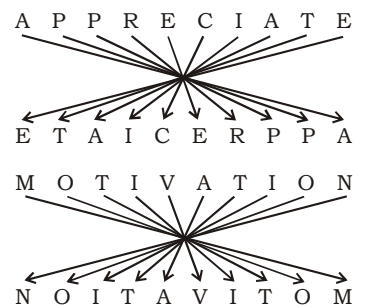


$$5 \leftrightarrow 6$$

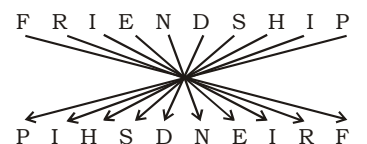
6. (1)



7. (4)



Similarly,



8. (2)

A group of cattle is called a herd. Similarly, A group of sailors is called a crew.

9. (2)

$$10. (2) (59 - 17 \times 2)^2 = (59 - 34)^2$$

$$= (25)^2 = 625$$

$$(44 - 8 \times 2)^2 = (44 - 16)^2$$

$$= (28)^2 = 784$$

$$(69 - 12 \times 2)^2 = (69 - 24)^2$$

$$= (45)^2 = 2025$$

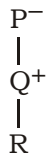
11. (4)

Freezing occurs when a liquid is cooled and turns into solid.

Similarly,

Evaporation occurs when a liquid is heated and turns into gases.

12.(2) $P \div Q \times R.$



Show that P is the paternal grandmother of R.

13.(4) $5 - 3 + 8 \times 4 \div 2 = 10$

Interchanging + and -, 3 and 5

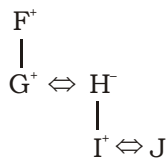
$\Rightarrow 3 + 5 - 8 \times 4 \div 2 = 10$

$\Rightarrow 3 + 5 - 8 \times 2 = 10$

$\Rightarrow 8 - 16 = 10$

$\Rightarrow -8 = 10$ is not Correct.

14.(4) F & G @ H # I @ J



So, G is father-in-law of J.

15.(2) $13 - 65 \div 45 \times 21 + 2 = 82$

interchanging 45 and 13, × and +

$\Rightarrow 45 - 65 \div 13 + 21 \times 2 = 82$

$\Rightarrow 45 - 5 + 42 = 82$

$\Rightarrow 40 + 42 = 82$

$\Rightarrow 82 = 82$

16.(1) 3. Aquarial

1. Aquarium

2. Aquatic

4. Aquatint

5. Aquavit

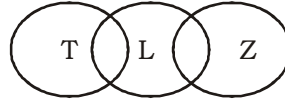
17.(3)

18.(4) $(4)^3 - 3 = 64 - 3 = 61$

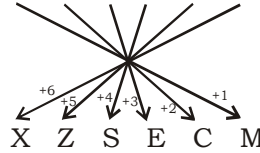
$(9)^3 - 3 = 729 - 3 = 726$

$(6)^3 - 3 = 216 - 3 = 213$

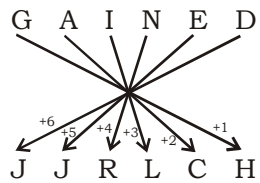
19.(4)



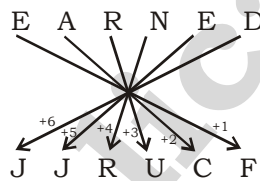
20.(1) L A B O U R



and,



Similarly,

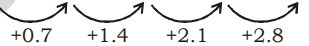


21.(1) $(5 + 9) \times 7 = 14 \times 7 = 98$

$(10 + 14) \times 7 = 24 \times 7 = 168$

$(1 + 3) \times 7 = 4 \times 7 = 28$

22.(1) $12.8 \quad 13.5 \quad 14.9 \quad 17 \quad 19.8$



23.(4)

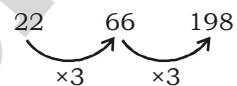
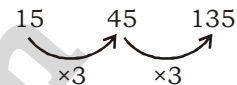
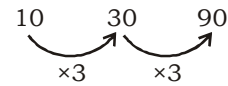
$A \xrightarrow{+2} C \xrightarrow{+2} E \xrightarrow{+2} G \xrightarrow{+2} I$

$B \xrightarrow{-7} U \xrightarrow{-7} N \xrightarrow{-7} G \xrightarrow{-7} Z$

$C \xrightarrow{+8} K \xrightarrow{+8} S \xrightarrow{+8} A \xrightarrow{+8} I$

$D \xrightarrow{-3} A \xrightarrow{-3} X \xrightarrow{-3} U \xrightarrow{-3} R$

24.(1) $17 \quad 51 \quad 153 \neq 147$



25.(1) $I \xrightarrow{-7} B \xrightarrow{-7} U \xrightarrow{-7} N \xrightarrow{-7} G \xrightarrow{-7} Z$

$R \xrightarrow{+7} Y \xrightarrow{+7} F \xrightarrow{+7} M \xrightarrow{+7} T \xrightarrow{+7} A$

1. (2) 2. (3) 3. (3) 4. (4) 5. (2)

6. (1) 7. (4) 8. (2) 9. (2) 10. (2)

11. (4) 12. (2) 13. (4) 14. (4) 15. (2)

16. (1) 17. (3) 18. (4) 19. (4) 20. (1)

21. (1) 22. (1) 23. (4) 24. (1) 25. (1)

ENGLISH LANGUAGE AND COMPREHENSION

12. (3) "has been" is correct expression.

18. (4) "held up" is the correct phrase. Means "to delay".

1. (2) 2. (2) 3. (4) 4. (2) 5. (2)

6. (4) 7. (2) 8. (4) 9. (1) 10. (1)

11. (3) 12. (3) 13. (4) 14. (2) 15. (3)

16. (4) 17. (1) 18. (4) 19. (2) 20. (3)

21. (2) 22. (3) 23. (1) 24. (1) 25. (1)

Words

Meaning in English

Meaning in Hindi

Cacophony

A harsh discordant mixture of sounds.

ऊँचे अप्रिय स्वर; बेसुरापन

Ant. symphony

Connoisseur

An Expert, especially one who understands the details, technique, or principles of an art and is competent to act as a critical judge.

पारखी, गुणज्ञ/परीक्षक

Culinary

of or relating to the kitchen or cookery.

पाक विषयक, पाक शाला संबंधी

Cosign

to sign a document jointly with another person

किसी अन्य के साथ दस्तावेज पर हस्ताक्षर करना

Exude

to ooze out, to undergo diffusion

पसीजना, बहना, टपकना

Forfeit

lose or be deprived of (property or a right or privilege) as a penalty for wrongdoing.

जब्त करना

Insidious

Spreading gradually or without being noticed, but causing serious harm.

घातक रूप से सक्रिय

Permeate

to diffuse through or penetrate something.

व्याप्त होना, पारगम्य, फैल जाना