

**QUANTITATIVE APTITUDE**

1. (4)  $\frac{\cos(a-b) - \cos(a+b)}{\cos(a+b)\cos(a+b)}$   
 Putting  $a = 45^\circ, b = 15^\circ$

$$\frac{\cos(45^\circ - 15^\circ) - \cos(45^\circ + 15^\circ)}{\cos(45^\circ - 15^\circ) + \cos(45^\circ + 15^\circ)}$$

$$= \frac{\cos 30^\circ - \cos 60^\circ}{\cos 30^\circ + \cos 60^\circ}$$

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

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

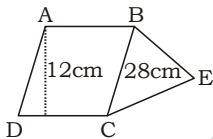
$$= \frac{3 + 1 - 2\sqrt{3}}{(\sqrt{3})^2 - (1)^2}$$

$$= \frac{4 - 2\sqrt{3}}{2} = 2 - \sqrt{3}$$

2. (1) The percent of sales turnover of company A with respect to company C

$$= \frac{120}{200} \times 100 = 60$$

3. (3)



ATQ,  
 Area of parallelogram = Area of triangle

$$12 \times 28 = \frac{1}{2} \times 28 \times H \Rightarrow H = 24$$

$\therefore$  Length of altitude of triangle = 24 cm

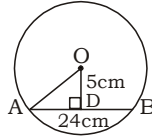
4. (2)  $\frac{4}{5} = 0.8, \frac{2}{3} = 0.67$

$$\frac{1}{11} = 0.09, \frac{2}{9} = 0.22$$

$\therefore$  Correct order =  $\frac{1}{11}, \frac{2}{9}$ ,

$\frac{2}{3}$  and  $\frac{4}{5}$ .

5. (2)



In  $\triangle AOD$   
 $AO^2 = AD^2 + OD^2$   
 $\Rightarrow AO^2 = (12)^2 + (5)^2$  ( $\because AD$

$$= \frac{AB}{2}$$
)

$$\Rightarrow AO^2 = 144 + 25 = 169$$

$$\Rightarrow AO = 13$$

$\therefore$  Radius of the circle = 13 cm

6. (4) Total distance covered by the student =  $32 \times 3 = 96$  km.  
 Time taken by the metro to travel its total distance

$$= \frac{96 - 6}{60} = 1\frac{1}{2} \text{ hr.}$$

$\therefore$  Speed of the student

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

$$= 4 \text{ km/hr}$$

7. (2) 

	B	A+C
Time $\rightarrow$	3	1
Eff. $\rightarrow$	1	3

Time taken by B to complete total work =  $\frac{10 \times (3+1)}{1} = 40$  days.

8. (2) Let, the rate of interest is R.

ATQ,

$$10 + \frac{10 \times 11 \times R}{12 \times 100}$$

$$= 11 + \frac{1 \times (1 + 2 + 3 \dots 10) \times R}{12 \times 100}$$

$$\Rightarrow \frac{11R}{120} - \frac{55R}{1200} = 1$$

$$\Rightarrow \frac{110R - 55R}{1200} = 1$$

$$\Rightarrow R = \frac{1200}{55} = 21\frac{9}{11} \%$$

$\therefore$  Required rate of interest

$$= 21\frac{9}{11} \%$$

9. (\*) Let the smaller number = x  
 ATQ,

$$\frac{x \times 115}{100} = \frac{(680 - x) \times 85}{100}$$

$$\Rightarrow 115x + 85x = 680 \times 85$$

$$\Rightarrow x = \frac{680 \times 85}{200} = 289$$

289 is not in option. (wrong ques.)

10. (4) On putting the value of a = 9 and b = 1

a - b = 8 and ab = 9 (satisfy)  
 $\therefore$  Value of a + b = 9 + 1 = 10

11. (4) The perpendicular distance from the centre of circle decreased when the length of chord increases.  
 So, option (4) is not correct.

12. (1) Amount paid by Sita  
 $= \frac{3000 \times 80 \times 95}{100 \times 100} = \text{Rs. } 2280$

13. (2)  $\operatorname{cosec} 15^\circ \sec 15^\circ$   
 $= \frac{1}{\sin 15^\circ \cos 15^\circ}$   
 $= \frac{2}{2 \sin 15^\circ \cos 15^\circ}$

$$= \frac{2}{\sin 30^\circ} \quad (\because 2 \sin \theta \cos \theta = \sin 2\theta)$$

$$= \frac{2}{1/2} = 4$$

14. (3)  $J_2 - J_1 = \frac{(28 - 20) \times 15000}{100} - \frac{(5 + 6) \times 15000}{100 \times 2}$   
 $= 1200 - 825 = 375$

15. (2) The smaller number =  $17 \times 11 = 187$

16. (4)  $\frac{\cos A}{1 - \tan A} + \frac{\sin A}{1 - \cot A}$   
 $= \frac{\cos A}{1 - \frac{\sin A}{\cos A}} + \frac{\sin A}{1 - \frac{\cos A}{\sin A}}$   
 $= \frac{\cos^2 A}{\cos A - \sin A} + \frac{\sin^2 A}{\sin A - \cos A}$

$$= \frac{\cos^2 A - \sin^2 A}{(\cos A - \sin A)}$$

$$= \frac{(\cos A + \sin A)(\cos A - \sin A)}{\cos A - \sin A}$$

$$= \cos A + \sin A$$

17. (4) ATQ,  
 $2p+q = 19$   
 cubing on both sides,  
 $(2p+q)^3 = (19)^3$   
 $\Rightarrow 8p^3+q^3+6pq(19) = 6859$

$$\Rightarrow pq = \frac{6859 - 361}{19 \times 6} = 23 \quad (2)$$

$$\frac{6498}{114} = 57$$

18. (3) We know that  
 If  $x+y+z = 0$ , the  $x^3+y^3+z^3 = 3xyz$

ATQ,  
 $x+y+z = 12-2-10 = 0$   
 $\therefore x^3+y^3+z^3 = 3(12)(-2)(-10)$   
 $= 720$  (Satisfy)

II.  $x+y = 48$   
 $2x+2y = 96$   
 On squaring on both sides.

$$4x^2+y^2+8xy = 9216$$

$$\Rightarrow 4x^2+4y^2 = 9216-256$$

$$= 8960$$

(Satisfy)  
 I and II both are correct.

19. (2)

	Rs.	Mango	
	90	9	$\times 10$
			} Same
	95	10	

CP	900	90
SP	855	90

$$\therefore \text{Loss} = \frac{45}{900} \times 100 = 5\%$$

20. (1) ATQ,  $\frac{2500 \times x}{100} = 600$

$$\Rightarrow x = 24$$

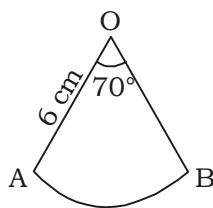
Value of  $x = 24$

21. (3)  $a : b : c : d$   
 $1 : 2$   
 $1 : 2$

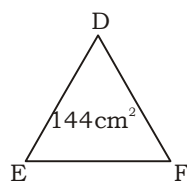
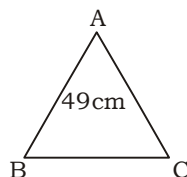
	1	: 2
<hr/>		
1	: 2	: 4

Required pin = 1248  
 It is divisible by 2, 3 and 13.

22. (1)



$\therefore$  Area of required sector  
 $= \frac{70}{360} \times \frac{22}{7} \times (6)^2 = 22 \text{ cm}^2$



$$\left(\frac{BC}{EF}\right)^2 = \frac{49}{144} \quad (\because \Delta ABC \sim \Delta DEF)$$

$$\Rightarrow BC = \frac{7 \times 16.80}{12} = 9.8 \text{ cm}$$

24. (3) Milk:-  $\frac{60\%}{2} : \frac{50\%}{8} = 1 : 4$

$\therefore$  Replaced mixture =  $\frac{4}{5}$

25. (3) In Delhi smallest number of owners of the BSNL sim card.

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

### GENERAL AWARENESS

1. (3) Berzelius discovered cerium, selenium, silicon and thorium.

Leon Jouhaux was awarded Nobel Prize in 1951 for Peace.

Albert Schweitzer received the 1952 Nobel Peace Prize for his philosophy of "Reverence for Life".

2. (2) Hojagiri is a folk dance of Tripura, performed by Bru Reang clan. Other dances of Tripura:-

Garia, Jhum, Maimita, Masak Sumani and Lebang boomani.

3. (1)

4. (1) In hockey umpires' signals and meaning.

Turn towards the other umpire with one arms straight up in the air  $\rightarrow$  Time start

Turn towards the other umpire and cross fully extended arm at the wrists above the head  $\rightarrow$  Time stop.

Point both arms horizontally toward the goal.  $\Rightarrow$  Penalty corner

Point both arms horizontally towards the center of the field.  $\Rightarrow$  Goal Score.

5. (4) Swadesh Bandhab samiti was founded by Ashwini kumar Dutta in 1905. It aimed to promote the consumption of indigenous products and the boycott of foreign goods.

Chandra Shekhar Tiwari reorganised the Hindustan Republican Association (HRA) under its new name of Hindustan Socialist Republican Association (HSRA).

Bhagat Singh is founded the Naujawan Bharat Sabha in March 1926.

Shivaram Hari Rajguru was known mainly for his involvement in the assassination of a British police officer named John Saunders.

6. (2) The English Education Act 1835 was a legislative Act of the Council of India, gave effect to a decision in 1835 by Lord William Bentinck, to reallocate funds it was required by the British

Parliament to spend on education and literature in India. Previously, they had given limited support to traditional Muslim and Hindu education and the publication of literature in the then traditional languages of education in India (Sanskrit and Persian); henceforward they were to support establishments teaching a Western curriculum with English as the language of instruction. Together with other measures promoting English as the language of administration and of the higher law courts (instead of Persian, as under the Mughal Empire), this led eventually to English becoming one of the languages of India, rather than simply the native tongue of its foreign rulers.

7. (1) International Women's Day - 8<sup>th</sup> March  
Minister of Development of North Eastern Region - G. Kishan Reddy  
Minister of Women and Child Development - Smriti Zubin Irani,
8. (2) Mrinalini Sarabhai received Padma Bhushan in 1992 and Padma Shree in 1965 for her contribution in art.
9. (2) Current Repo Rate - 6.25%  
Current Bank Rate - 6.50%  
Current Reverse Repo Rate - 3.35%  
Current MSF Rate - 6.50%  
Liquidity adjustment facility is a monetary policy which allows banks to borrow money through repurchase agreements (repos) or to make loans to the RBI through reverse repo agreements.
10. (3) Nepal lies in north of India.  
Sri Lanka lies in the South of India.  
Afghanistan lies in north-west of India.

11. (2) Article 25 - Freedom of conscience and free profession, practice and propagation of religion.  
Article 26 - Freedom to manage religious affairs Subject to public order, morality and health, every religious denomination or any section thereof shall have the right.  
Article 27 - Freedom as to payment of taxes for promotion of any particular religion.  
Article 28 - Freedom as to attendance at religious instruction or religious worship in certain educational institutions.
12. (1) Kaushalya Matritva Scheme, there is a provision to give a lump sum assistance of Rs. 5 thousand to women beneficiaries on the birth of a second daughter. The scheme will help in the upbringing and education of the girl child.
13. (4)
14. (3) Xuanzang also known as Hiuen Tsang, was Chinese Buddhist monk. He came to India during the reign of Harsha Vardhan. Kumargupta I was the founder of Nalanda University. He founded the university in 5<sup>th</sup> century CE.
15. (4)
16. (3)
17. (4) The great lakes largest group of fresh water lakes on earth it includes. Lake Superior, Michigan, Huron, Erie and Ontario.
18. (2) Meristematic tissue is made up of a group of cells that divide continuously to form new cells.  
Tissues that have become mature and do not have the ability to divide further are called permanent tissues.
19. (1) Triple Jump also called hop, step and jump.

20. (2) Red flag - a foul jump  
Yellow to indicate warning.  
Blood - 7.35 to 7.45  
Milk of Magnesia (solid magnesium hydroxide) - 10.52  
Lemon juice - between 2 and 3
21. (1) Mundari folk dance is a famous dance of Odisha and Jharkhand.
22. (1) Coffee - Sandy loam  
Maize - Old alluvial  
Millets - Sandy and soft coloured Goradu soil
23. (2) Ranjit Rath - Chairman and Managing Director of Oil India Ltd (OIL).  
Suresh N. Patel - Vigilance Commissioner  
Santosh Iyer - Managing Director and CEO of the Indian operations (from 1 January, 2023).
24. (4) Rabindranath Tagore was awarded Noble Prize in 1913 for Gitanjali. He founded Visva-Bharati University. His compositions were chosen by two nations as national anthems: India's "Jana Gana Mana" and Bangladesh's "Amar Shonar Bangla". The Sri Lankan national anthem was inspired by his work. He also wrote Ghare Baire and Gora.
25. (2) Sixth Five Year Plan (1980 - 85) was to provide proper education for all the people of India, speedy development of industry in India, rise in the sector employment, reduction of poverty.  
The Fifth Five-Year Plan of India (1974-1979) was formulated by the Indira Gandhi government. It focused on agriculture, poverty alleviation, and employment generation.  
The Fourth Five Year Plan (1969-1974) was developed in response to drought, devaluation, and an inflationary recession. Its

Indira Gandhi's first five year plan.

Rajiv Gandhi was the Prime Minister of the country when the Seventh Five Year Plan was executed from 1985 to 1990. The Plan focussed on a self-sufficient economy, technological development and possibilities of gainful employment.

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

**GENERAL INTELLIGENCE & REASONING**

1. (3)  $168 \div 4 + 216 \div (78 \times 1 - 8) = 14$

Interchanging 78 and 14  
 $168 \div 4 + 216 \div (14 \times 1 - 8) = 78$   
 $42 + 216 \div 6 = 78$   
 $42 + 36 = 78$   
 $78 = 78$

2. (1) Swarm, means a group of bees and troop means a group of monkeys.

3. (2) The Baby of cattle is called a calf similarly baby of a horse is called a foal.

4. (3)

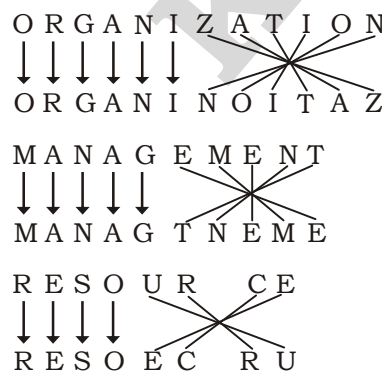
5. (3)

6. (4)  $(9 - 2)^3 = 343$   
 $(12 - 2)^3 = 729$

Similarly,

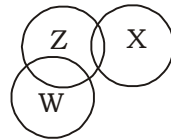
$(12 - 7)^3 = 125$

7. (4)



8. (2)  $\frac{12}{\times 2+1} \frac{25}{\times 2+1} \frac{51}{\times 2+1} \frac{103}{\times 2+1} \frac{207}{\times 2+1} \frac{415}{\times 2+1} \frac{831}{\times 2+1}$

9. (4) The possible venn diagram is



Neither conclusion follows

10. (2)  $\begin{matrix} A & N & N & U & A & L \\ +2 & +2 & +4 & +4 & +6 & +6 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ C & P & R & Y & G & R \end{matrix}$   
 $\begin{matrix} A & M & O & U & N & T \\ +2 & +2 & +4 & +4 & +6 & +6 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ C & O & S & Y & T & Z \end{matrix}$

Similarly,

$\begin{matrix} A & G & E & N & D & A \\ +2 & +2 & +4 & +4 & +6 & +6 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ C & I & I & R & J & G \end{matrix}$

11. (4)

12. (1)  $FHG \rightarrow F +2, H -1, G - \text{odd}$   
 $WZY \rightarrow W +3, Z -1, Y$   
 $LON \rightarrow L +3, O -1, N$   
 $ADC \rightarrow A +3, D -1, C$

13. (3) By hit and trial method

$A \div B \times C,$

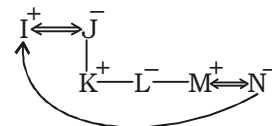


A is the maternal aunt of C

14. (3)  $\begin{matrix} T & Y & G \\ -2 & -3 & +3 \\ \downarrow & \downarrow & \downarrow \\ R & V & J \\ -2 & -3 & +3 \\ \downarrow & \downarrow & \downarrow \\ P & S & M \\ -2 & -3 & +3 \\ \downarrow & \downarrow & \downarrow \\ N & P & P \\ -2 & -3 & +3 \\ \downarrow & \downarrow & \downarrow \\ L & M & S \end{matrix}$

15. (2)  $I * J - K \% L \$ M * N,$

I related to N



Father-in-law

16. (1)

17. (2) The order of words in a dictionary is

2. theradbare  
 5. threat

1. thresh

4. threw

3. thrice

order- 2,5,1,4,3

18. (4) By hit and trial method putting -, +, x, ÷, x, x, =

$[(42 - 26) + (12 \times 2)] \div (4 \times 5) \times 5 = 10$

$\{16 + 24\} \div 20 \times 5 = 10$

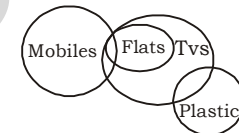
$[40 \div 20] \times 5 = 10$

$[2] \times 5 = 10$

$2 \times 5 = 10$

$10 = 10$

19. (2) The possible venn diagram is



20. (1) By hit and trial method

$8 \div 6 \times 9 + 7 - 4 = 12$

interchanging 7 and 4

$8 \div 6 \times 9 + 4 - 7 = 12$

$\frac{4}{3} \times 9 - 3 = 12$

$12 - 3 = 12$

9 = 12 (incorrect equation)

21. (2)  $6 \times 3 - 2 = 16$

$4 \times 6 - 2 = 22$

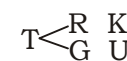
Similarly,

$9 \times 8 - 2 = 70$

22. (4)

$\begin{matrix} T & T & D & S \\ +2 & -7 & +8 & -3 \\ \downarrow & \downarrow & \downarrow & \downarrow \\ V & M & L & P \\ +2 & -7 & +8 & -3 \\ \downarrow & \downarrow & \downarrow & \downarrow \\ X & F & T & M \\ +2 & -7 & +8 & -3 \\ \downarrow & \downarrow & \downarrow & \downarrow \\ Z & Y & B & J \\ +2 & -7 & +8 & -3 \\ \downarrow & \downarrow & \downarrow & \downarrow \\ B & R & J & G \end{matrix}$

23. (1) From fig 1 and 2



$K \leftrightarrow U$

$R \leftrightarrow G$

$T \leftrightarrow P$

24. (3)  $(4 + 7) \times 15 = 165$   
 $(14 + 26) \times 15 = 600$

Similarly,

$(3 + 6) \times 15 = 135$

25. (1)  $22 - 40 \rightarrow 22 \times 2 - 1 = 43$  —  
odd

$24 - 47 \rightarrow 24 \times 2 - 1 = 47$

$18 - 35 \rightarrow 18 \times 2 - 1 = 35$

$16 - 31 \rightarrow 16 \times 2 - 1 = 31$

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

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

11. (4) 12. (1) 13. (3) 14. (3) 15. (2)

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

21. (2) 22. (4) 23. (1) 24. (3) 25. (1)

### ENGLISH LANGUAGE AND COMPREHENSION

3. (4) replace "hasn't" by "doesn't". ( As it reflects a general habit and Present Indefinite Tense is used for the same.

6. (2) Remove "about", as it's superfluous here.

13. (3) "assessment" is wrongly spelt.

Meaning -the action or an instance of making a judgment about something; the act of evaluating

something. (मूल्यांकन)

Synonyms- appraisal, evaluation, estimate.

16. (4) "completely" is correct here. We need an Adverb to qualify the verb 'forgot'.

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

6. (2) 7. (3) 8. (3) 9. (4) 10. (2)

11. (1) 12. (4) 13. (3) 14. (1) 15. (1)

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

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

Words	Meaning in English	Meaning in Hindi
Anguish	Extreme pain or distress of body or mind	अत्यधिक दर्द, संकट या चिंता
Consensus	General agreement	सर्वसम्मति
Cacophony	A harsh discordant mixture of sounds. <i>Ant. harmony.</i>	ऊँचे अप्रिय स्वर; बेसुरापन
Exacerbate	To worsen (a disease or problem)	बदतर बनाना (रोग या समस्या को)
Excruciate	To inflict intense pain on	कष्ट देना
Exacerbate	To make worse (a problem, bad situation, negative feeling, etc.) <i>Syn. aggravate; exasperate.</i>	बिगाड़ देना (विशेषतः रोग या समस्या को)
Gloomy	Sad, dejected, glum	दुवी, उदास
Goofy	Being crazy, ridiculous, silly.	हास्यास्पद
Harsh	Causing discomfort or pain	कटु, कर्कश
Thrifty	Using money and other resources carefully and not wastefully. <i>Syn. economical, frugal.</i>	किफायती, मितव्ययी
Stately	Impressive or grand in size, appearance, or manner.	शानदार, प्रभावशाली, भव्य
Manuscript	A book, document, or piece of music written by hand rather than typed or printed.	हस्तलिखित
Repulsive	Arousing intense distaste or disgust, unattractive. <i>Syn. abhorrent, abominable, appalling, awful, disgusting.</i> <i>Ant. pleasant, interesting, attractive.</i>	अरुचिकर, घृणास्पद
Slender	1- (General Meaning): Thin; slim. <i>Ex: "Her slender neck"</i> 2- (figurative) meagre; deficient. Being a person of slender means, he was unable to afford any luxury.	दुबला पतला, छरहरा कम, अत्यल्प
Serious	Requiring much thought or work	गंभीर
Traumatic	Of, relating to, resulting from, or causing a trauma	अतिघातक, कष्टदायक