

QUANTITATIVE APTITUDE

1. (3) The percentage of number of lecturers recruited in state A in the year 2017, with respect State B in the year 2019

$$= \frac{10}{22} \times 100 = 45.45\%$$

2. (4) $x^2 + y^2 + z^2 = xy + yz + zx$, $x = 1$

$$\text{then, } \frac{10x^4 + 5y^4 + 7z^4}{13x^2y^2 + 6y^2z^2 + 3z^2x^2}$$

$$\therefore x^2 + y^2 + z^2 = xy + yz + zx$$

If $x = y = z = 1$

$$\text{then, } \frac{10 \times 1 + 5 \times 1 + 7 \times 1}{13 \times 1 \times 1 + 6 \times 1 \times 1 + 3 \times 1 \times 1}$$

$$= \frac{22}{22} \Rightarrow 1$$

3. (1) MP = 90

SP = 68

Required discount percentage

$$= \frac{22}{90} \times 100 = \frac{220}{9} = 24.44\%$$

4. (3) $\Delta ABC \sim \Delta QRP$,
ATQ,

$$\frac{\text{ar}(\Delta ABC)}{\text{ar}(\Delta QRP)} = \left(\frac{BC}{PR}\right)^2$$

$$\Rightarrow \sqrt{\frac{9}{4}} = \frac{15}{PR}$$

$$\Rightarrow \frac{3}{2} = \frac{15}{PR}$$

$$\Rightarrow PR = 10 \text{ cm}$$

5. (3) $x + \frac{1}{2x} = 3$

Multiplying both side by 2

$$2x + \frac{1}{x} = 6$$

Cubing both side

$$8x^3 + \frac{1}{x^3} + 3 \times 2 \times 6 = 216$$

$$8x^3 + \frac{1}{x^3} = 180$$

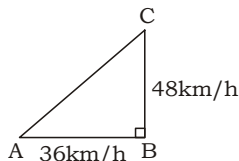
6. (3) $\sqrt{\frac{1+\sin A}{1-\sin A}}$

$$= \sqrt{\frac{1+\sin A}{1-\sin A}} \times \sqrt{\frac{1+\sin A}{1+\sin A}}$$

$$\Rightarrow \frac{1+\sin A}{\sqrt{1-\sin^2 A}}$$

$$= \frac{1}{\cos A} + \frac{\sin A}{\cos A} = \sec A + \tan A$$

7. (3) ATQ,



From Pythagoras theorem

$$AC = \sqrt{36^2 + 48^2}$$

$$AC = \sqrt{1296 + 2304}$$

$$AC = \sqrt{3600}$$

$$AC = 60 \text{ km/h} \Rightarrow 60 \times \frac{5}{18} \text{ m/s}$$

Distance between two buses

$$= 60 \times \frac{5}{18} \times 15 \Rightarrow 250 \text{ m}$$

8. (1) The ratio of total earnings of P to the total earning of Q = $(105+96+65+115+130) : (150+110+122+106+68) = 511 : 556$

9. (4) ATQ,
 $90^\circ + 36^\circ = 126^\circ$
The total cost of production, item by companies A and E.

$$= \frac{800,000 \times 126^\circ}{360^\circ}$$

$$= \frac{800,000 \times 126 \times 5000}{360}$$

$$\Rightarrow \frac{8 \times 126 \times 5 \times 10000000}{36}$$

$$\Rightarrow 140 \times 10000000$$

$$\Rightarrow 140 \text{ crores.}$$

10. (4) $\Delta ABC \sim \Delta DEF$,
We know that,

$$\left(\frac{BC}{EF}\right)^2 = \frac{A_1}{A_2}$$

$$\frac{16}{25} = \frac{80}{A_2} \Rightarrow A_2 = 125 \text{ cm}^2$$

11. (2) ATQ,

$$P+2 \text{ SI} = 3640 \quad \dots \text{(I)}$$

$$P+8 \text{ SI} = 4060 \quad \dots \text{(II)}$$

$$\text{eq (II)-eq (I)}$$

$$6 \text{ SI} = 420$$

$$\text{SI} = 70$$

$$\text{SI of tow years} = 140$$

$$\text{Principal} = 3640 - 140 = 3500$$

$$\text{Rate of interest} = \frac{70}{3500} \times 100$$

$$= 2\%$$

12. (2) $8 \cot \theta = 6$

$$\cot \theta = \frac{3}{4}$$

Now,

$$\frac{\sin \theta + \cos \theta}{\sin \theta - \cos \theta} = \frac{\sin \theta (1 + \cot \theta)}{\sin \theta (1 - \cot \theta)}$$

$$= \frac{1 + \cot \theta}{1 - \cot \theta} = \frac{1 + \frac{3}{4}}{1 - \frac{3}{4}} = 7$$

13. (4) The percentage of Kartik's score out of the total score

$$= \frac{80}{400} \times 100 = 20\%$$

14. (2) diagonal of cube

$$= a\sqrt{3} = 6\sqrt{3}$$

$$a = 6$$

$$l = 18, b = 6, h = 6$$

Surface area of cuboid

$$= 2(lb + bh + hl) = 2(18 \times 6 + 6 \times 6 + 6 \times 18) = 2 \times 252 = 504 \text{ cm}^2$$

Alternatively:-



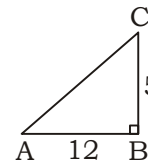
Side of cube = 6

By placing two cubes side by side, 2 cubes were hidden. By placing 3 cubes, 4 cubes would be reduced.

$$= 14a^2$$

$$= 14 \times 36 = 504 \text{ cm}^2$$

15. (4) $\tan A = \frac{5}{12}$



$$AC = \sqrt{BC^2 + AB^2}$$

$$\Rightarrow AC = \sqrt{25 + 144}$$

$$\Rightarrow AC = \sqrt{169} = 13$$

$$\text{Now, } \cos A = \frac{12}{13}$$

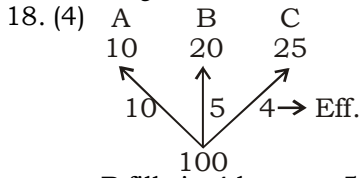
16. (4) ATQ,

$$\text{LCM} \times \text{HCF} = 1 \text{ Number} \times 2 \text{ Number}$$

$$4104 \times 9 = 171 \times 2 \text{ Number}$$

$$2^{\text{nd}} \text{ Number} = 216$$

17. (3) $x^2 - 2xy = 84$, $x - y = -10$,
 $x - y = -10$
 Squaring both side
 $\Rightarrow x^2 + y^2 - 2xy = 100$
 $\Rightarrow y^2 = 100 - 84$
 $\Rightarrow y^2 = 16$
 $\Rightarrow y = 4$



B fills in 4 hours = $5 \times 4 = 20$
 C fills in 2 hours = $4 \times 2 = 8$
 Remaining work = $100 - 28 = 72$
 Required percentage

$$= \frac{72}{100} \times 100 = 72\%$$

19. (2) Average speed = $\frac{\text{Total distance}}{\text{Total time}}$

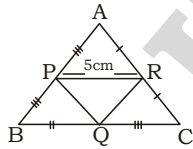
Total distance = $96 + 124 + 105$
 Total time = $\frac{96}{16} + \frac{124}{31} + \frac{105}{7}$
 $= 6 + 4 + 15 = 25$

So, Average speed = $\frac{325}{25} = 13 \text{ km/h}$

20. (1) CP
 $\text{₹}350 \rightarrow 100 \text{ Apple}$
 $\text{₹}35 \rightarrow 10 \text{ Apple}$
 $\text{₹}210 \rightarrow 60 \text{ Apple}$
 SP
 $\text{₹}48 \rightarrow 1 \text{ dozen} = 12$
 $\text{₹}240 \rightarrow 60$

Required profit percentage
 $\frac{30}{210} \times 100 = 14 \frac{2}{7} \% \text{ Profit}$

21. (1) ATQ,



$PR = \frac{BC}{2}$, $QR = \frac{AB}{2}$, $PQ = \frac{AC}{2}$
 So, $QR = 5 \text{ cm}$

22. (1) First number is $5x$ and second number is $7x$
 ATQ,

$$\frac{5x + 6}{7x + 6} = \frac{3}{4}$$

$$21x + 18 = 20x + 24$$

$$x = 6$$

Numbers $5x$ and $7x = 30$ and 42

23. (3) Let, the population of town = x
 ATQ,

$$x \times \frac{112}{100} \times \frac{92}{100} = 64400$$

$$\Rightarrow x = \frac{700 \times 2500}{20}$$

$$\Rightarrow x = 62500$$

Alternatively:-

$$12\% = \frac{3}{25}, \quad 8\% = \frac{2}{25}$$

Before :	Now
25	: 28
25	: 23
<hr/>	
625	: 644
644 units =	64400
1 unit =	100
625 units =	62500

24. (3) $83p93678Q$ is divisible by 72.

$$\sqrt{P^2 + Q^2 + 12}$$

$83p93678Q$, is divisible by 9×8

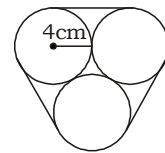
$$8 \overline{)78Q} \begin{array}{r} 98 \\ \underline{72} \\ 6Q \\ \underline{64} \\ Q-4 \end{array}$$

$Q = 4$
 By the divisibility method of 9

$$\frac{8+3+p+9+3+6+7+8+Q}{9} = \frac{44+P+Q}{9} = \frac{48+P}{9} \Rightarrow P = 6$$

Now, $\sqrt{P^2 + Q^2 + 12}$
 $= \sqrt{36 + 16 + 12} = \sqrt{64} \Rightarrow 8$

25. (1)



Length of thread = $(3 \times 2r + 2\pi r)$
 $= 3 \times 2 \times 4 + 2\pi \times 4 = 24 + 8\pi$

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

GENERAL AWARENESS

1. (3) Months according to Hindu Calendar - Chaitra (March-April), Vaishaka (April-May), Jyeshtha (May-June), Ashada (June-July), Sharvan (July-August), Bhadrpada (Aug.-Sep.), Ashvina (Sep.-Oct.),

Kartik (Oct-Nov), Margashir - Asha (Nov-Dec), Pausha (Dec-Jan), Magha (Jan-Feb.) Phalgun (Feb-March).

Ugadi festival is celebrated states of Karnataka, Telangana, Andhra Pradesh.

2. (2) Writer and Director of Lagaan - Ashutosh Gowariker
 National Film Award was started in 1954.

68th National Film Award, 2022 winner-

Best Actor - Suriya and Ajay Devgan
 Best Actress - Aparna Balamurali
 Best Film - Soorarai Pottru
 Best Film - Thana ji
 Providing Whole some Entertainment

Best Choreography- Natyam (Telugu)
 Best Director - Sachidanandan

3. (3) Best Book - The Longest Kiss

4. (3) Right to life - Article 21
 Right to Education - Article 21A

It was inserted in the constitution by 86th Amendment Act, 2002.

Right to Property was added by the 44th Amendment Act 1978.

5. (3) Mawsynram is a town is East Khasi Hills district of Meghalaya.

6. (2)

7. (1) First Nawab of Bengal was Murshid Quli Khan (1717-1727). Robert Clive defeated the last independent Nawab Siraj-ud-Daulah at Battle of Plassey in 1757.

8. (4) Bricks temple of Bhitargaon (Kanpur) was built in the 5th Century A.D. during the Gupta Empire.

9. (4) Ghoomer and Kalbelia are the folk dances of Rajasthan. Folk songs of Birha is sung in the region of Baghel Khand (Madhya Pradesh).

10. (1) Ligand Field Theory describes the bonding, orbital arrangement and other characteristics of coordination. It represents an application of molecular orbital theory to transition metal complexes.

Valence Bond theory and molecular orbital theory were developed to use the methods of quantum mechanics to explain chemical bonding.

GENERAL INTELLIGENCE & REASONING

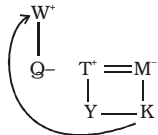
11. (1) The initiative is for students from class 1 to 7. The aim of this initiative is to encourage students who dropped out of schools during the Covid-19.
12. (2) **Nobel Prize 2022**
Winners:-
Physics - Alain Aspect, John Clauser, Anton Zeilinger
Chemistry - C.R. Bertozzi, M.P. Meldal, K.B. Sharpless.
Physiology - Svante Paaba
Literature - Annie Ernaux
Peace - Ales Bialiatski
13. (3) **Rajiv Bahl** - D.G. of ICMR
Anil Chauhan - 2nd CDS
Ranjit Rath - Chairman & MD of Oil India.
14. (4) Endoderm (innermost layer), mesoderm (middle) and Ectoderm (outer layer).
 Acoelomate - an invertebrate lacking a coelom.
15. (2)
16. (1)
- | | |
|--------------------------------|---|
| Endogenic | Exogenic |
| Deep inside the Earth | Act on the surface of earth |
| Known as 'Constructive forces' | Known as 'Distractive forces' |
| Ex:- Earthquakes eruptions | Ex:- winds, river, and volcanic glaciers etc. |
17. (4) **Years**
- | | |
|------|---------------------------------|
| 1987 | India & Pakistan |
| 1996 | India, Pakistan and Sri Lanka |
| 2011 | India, Sri Lanka and Bangladesh |
| 2023 | India |
18. (2) IPL (Indian Premier League) was founded by BCCI in 2007. First IPL was played in 2008. Brijesh Patel is the Current Chairman.
Most Runs - Virat Kohli
Most Wickets - Dwayne Bravo
Current Champion - Gujrat Titans.
Runner up 2022 - Rajasthan Royals.
 Final match of TATA IPL 2022 was played at Narendra Modi Stadium Ahmedabad.

19. (4) High Yielding variety Programme (HYVP) was launched in 1996 which helped the country in attaining self sufficiency in food.
20. (2) Percentage of Gases in the atmosphere
 N₂ (78.08), O₂ (20.95), Ar (0.93), Ne(0.0018), He (0.0005), H₂ (0.00005), Xe (0.000009), H₂O (0 to 4), Co₂ (0.04) Methane (0.00017), Nitrous Oxide (0.00003)
21. (1) The Capital of Chahamanas rulers were Shakambhari and later Ajayameru (Ajmer). The territory ruled by them was called Sapadal aksha.
22. (2) Indian Parliamentary Group was formed in the year 1949 in pursuance of a motion adopted by the constituent assembly on 16th Aug. 1948.
23. (3)
24. (4) Bheel Revolt of 1818, one of the first uprisings undertaken by a tribal group in country. Gameti as was the leader of Bhil.
 Khasi Revolt of 1833 occurred in the land between the Khasi and Jaintia hills, in the protest of a planned British route across the area. Tiroit Sing Syiem was the leader had changed Munda revolt of 1899 was launched against landlords and British Government. It was led by Birsa Munda.
 Santhal revolt took place in 1855-56.
25. (4) Platyhelminthes are commonly known as flatworms or tape worm (invertebrate).
 Arachind is a class of joint legged invertebrate animals (arthropods).
 Chordate is an animal of phylum Chordata.
1. (3) 2. (2) 3. (3) 4. (3) 5. (3)
 6. (2) 7. (1) 8. (4) 9. (4) 10. (1)
 11. (1) 12. (2) 13. (3) 14. (4) 15. (2)
 16. (1) 17. (4) 18. (2) 19. (4) 20. (2)
 21. (1) 22. (2) 23. (3) 24. (4) 25. (4)

1. (2) Interchanging × and ÷, 7 and 9
 (i) $8 \times 3 \div 6 + 9 - 7$
 $8 \div 3 \times 6 + 7 - 9$
 $16 - 2 = 14$
 (ii) $9 - 7 \times 1 + 6 \div 3$
 $7 - 9 \div 1 + 6 \times 3$
 $7 - 9 + 18 = 16$
2. (3) $12 - 145 \rightarrow 12^2 + 1 = 145$
 $16 - 257 \rightarrow 16^2 + 1 = 257$
 $14 - 193 \rightarrow 14^2 + 1 = 197 \neq 193$
 $10 - 101 \rightarrow 10^2 + 1 = 101$
3. (2)
- | | | |
|-----|-----|------|
| O | M | L |
| -1↓ | +5↓ | +17↓ |
| P | R | C |
| -1↓ | +5↓ | +17↓ |
| O | W | T |
| -1↓ | +5↓ | +17↓ |
| N | B | K |
| -1↓ | +5↓ | +17↓ |
| M | G | B |
4. (4) By hit and trial method.
 $24 \times 8 + 6 \div 3 - 18 = 22$
 Interchanging × and +
 $\Rightarrow 24 + 8 \times 6 \div 3 - 18 = 22$
 $\Rightarrow 24 + 16 - 18 = 22$
 $\Rightarrow 22 = 22$
5. (3) The right answer is 3
6. (3) The order of words in a dictionary is:-
 5. theogonic
 4. theologic
 3. theology - third position
 2. theorem
 1. theory
7. (3) The possible venn diagram is
-
- Only conclusions I and II follow.
8. (4)
- | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| P | L | A | Y | G | R | O | U | N | D |
| -1↓ | -1↓ | -1↓ | -1↓ | -1↓ | -1↓ | -1↓ | -1↓ | -1↓ | -1↓ |
| O | K | Z | X | F | Q | N | T | M | C |
| -1↓ | -1↓ | -1↓ | -1↓ | -1↓ | -1↓ | -1↓ | -1↓ | -1↓ | -1↓ |
| S | C | I | E | N | C | E | | | |
| -1↓ | -1↓ | -1↓ | -1↓ | -1↓ | -1↓ | -1↓ | -1↓ | -1↓ | -1↓ |
| R | B | H | D | M | B | D | | | |
- Similarly,

T	Y	P	E	W	R	I	T	E	R
-1↓	-1↓	-1↓	-1↓	-1↓	-1↓	-1↓	-1↓	-1↓	-1↓
S	X	O	D	V	Q	H	S	D	Q
9. (2) $6 : 125 \rightarrow (6-1)^3 = 125$
 $2 : 1 \rightarrow (2-1)^3 = 1$
 $5 : 64 \rightarrow (5-1)^3 = 64$
10. (1) The right answer is option (1)
11. (2) The possible venn diagram is
-

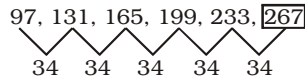
12. (1) From fig 2 to fig 3.
13. (4) The right answer is 4
14. (3) Interchanging 184 and 248
 $\Rightarrow 248 \div 4 + 184 \div (4 \times 6 - 2 \times 8) = 77$
 $\Rightarrow 184 \div 4 + 248 \div (4 \times 6 - 2 \times 8) = 77$
 $\Rightarrow 46 + 248 \div 8 = 77$
 $\Rightarrow 46 + 31 = 77$
 $\Rightarrow 77 = 77$
15. (3) W & Q # T & Y @ M % K



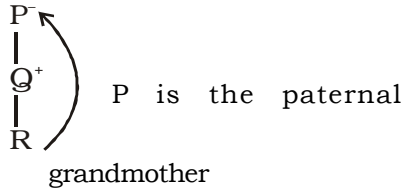
So, W is father's of K.

16. (3) Opposit-4 Opposit-3
- Opposit-2 Opposit-1
- Opposit-4 Opposit-2
- Opposit-3 Opposit-1
- Opposit-4 Opposit-1
- Opposit-3 Opposit-2
17. (*) $15 + 11 + 43 = 69$
 $13 + 8 + 48 = 69$
 $9 + 7 + ? = 69$
 $? = 69 - 16 = 53$
 Wrong answer given by SSC.
18. (1) The right answer is option (I)
19. (1) $5^2 + 4^2 = 41$
 $2^2 + 8^2 = 68$
 $6^2 + 8^2 = 100$

20. (2) Antling is the name for baby ant.
- Similarly,
 Fawns are young deer.



21. (4)
22. (3) By hit and trial method.
 $P \div Q - R$



23. (1) H F K
 $+3 \downarrow +2 \downarrow +2 \downarrow$
 K H M
 $+3 \downarrow +2 \downarrow +2 \downarrow$
 N J O
 $+3 \downarrow +2 \downarrow +2 \downarrow$
 Q L Q
 $+3 \downarrow +2 \downarrow +2 \downarrow$
 T N S

24. (2)
- Y N U F,
 $+7$
 15 +7
 C R Y B
 $+15 -2$
 A T R E
 $+19 +7$
 D S Z A
 $+19$

25. (1) The right answer is 1.
 Rice comes under grain,
 Similarly,
 Lentils is related to pulses.

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

ENGLISH LANGUAGE AND COMPREHENSION

3. (1) "Demolish" is incorrectly spelt as "dimolish".
 Meaning - To destroy something, for example a building
 (भवन आदि को) गिरा देना, तोड़ देना, ध्वस्त कर देना।
5. (3) "switch off" is correct expression here. It means- to turn off
7. (4) error of preposition - replace "at" by "in".
 "In the classroom " is the correct expression.
9. (2) "choices are made". So "make a right choice" is correct expression.
17. (3) "Craftsmanship" is wrongly spelt as "Craftmanship " meaning- .the skill used by somebody to make something of high quality with his/her hands. (शिल्पकारिता, कारीगरी)
18. (2) " wrote a letter "is correct expression, (as the action occurred in past)
19. (4) "since" is used when a specific point of time is mentioned.
1. (3) 2. (3) 3. (1) 4. (1) 5. (3)
 6. (4) 7. (4) 8. (1) 9. (2) 10. (3)
 11. (3) 12. (3) 13. (4) 14. (1) 15. (1)
 16. (3) 17. (3) 18. (2) 19. (4) 20. (3)
 21. (3) 22. (2) 23. (4) 24. (2) 25. (1)

Words

Meaning in English

- Glitterati People who are famous, wealthy, and attractive.
- Homicide a killing of one human being by another.
- Paranoia A type of mental illness in which you wrongly believe that other people want to harm you.
Syn. Madness, insanity, lunacy
- Regicide The killing of a king.
- Ruthlessly mercilessly, without showing any compassion.
Ant. leniently .
- Unscrupulously behaving in a way that is dishonest or unfair in order to get what you want.
- Uxoricide The killing of one's wife.

Meaning in Hindi

- समृद्ध और प्रसिद्ध लोग
- मानव-हत्या
- मिथ्या संदेह या वहम का रोग, भ्रान्ति रोग
- राज-हत्या
- निर्दयतापूर्ण
- बेईमानी से
- पत्नी-हत्या