

QUANTITATIVE APTITUDE

1. (2) 97×103
 $= (100-3)(100+3) = 10000 - 9$
 $= 9991$

2. (4) Simple interest : Principal
 $= 25 : 36$
 Let, The number of year = annual rate of interest = R
 ATQ,
 $25 = \frac{36 \times R \times R}{100}$

$\Rightarrow R = \frac{5 \times 10}{6} = 8.33\%$

3. (2) ATQ,

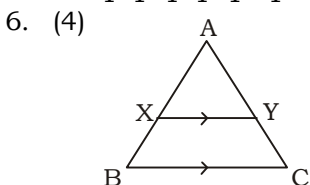
P	Q
70%	30%

 The percentage of registered votens are expected to vote of candidate P
 $= \frac{70 \times 60}{100} + \frac{30 \times 30}{100}$
 $= 42 + 9 = 51\%$

4. (3) Let, the length of a rectangle is l and the breadth of a rectangle is b
 ATQ,
 $(l-4)(b+2) = lb$
 $\Rightarrow lb - 4b + 2l - 8 = lb$
 $\Rightarrow lb + 2l - 4b - 8 = lb$
 $\Rightarrow 2l - 4b = 8$
 $\Rightarrow l - 2b = 4 \dots(I)$
 Now,
 $l - 4 = b + 2$
 $\Rightarrow l - b = 6 \dots(II)$
 From eq (I) - eq(II)
 $l - b - (l - 2b) = 6 - 4$
 $\Rightarrow b = 2$
 $\Rightarrow l = 8$
 Perimeter = $2(l+b)$
 $= 2 \times 10 = 20 \text{ m}$

5. (1) Given,
 $x + \frac{1}{x} = 1$,
 We know that, If $x + \frac{1}{x} = 1$

then, $x^3 = -1$.
 Now, $x^{12} + x^9 + x^6 + x^3 + 1$
 $= (x^3)^4 + (x^3)^3 + (x^3)^2 + x^3 + 1$
 $= (-1)^4 + (-1)^3 + (-1)^2 + (-1) + 1$
 $= 1 - 1 + 1 - 1 + 1 = 1$



The mid points of AB and AC of a ΔABC are X and Y respectively.

$BC + XY = 24$
 We know that,
 $XY = \frac{BC}{2} \Rightarrow \frac{XY}{BC} = \frac{1}{2}$

$\Rightarrow XY : BC = 1 : 2$
 ATQ,
 $3 \text{ unit} = 24$
 $(BC - XY) 1 \text{ unit} = 8$
 The value of $BC - XY = 8 \text{ cm}$

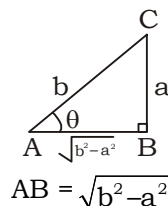
7. (1) The weighted average score of sonali is
 $= \frac{8 \times 2 + 8 \times 3 + 6 \times 3 + 6.5 \times 4}{2 + 3 + 3 + 4}$
 $= \frac{16 + 24 + 18 + 26}{12} = \frac{84}{12} = 7$

8. (4) Number of people who said Football is their favorite game
 $= \frac{4980 \times 30}{100} = 1494$

7	49, 147, 322
7	7, 21, 46

 HCF = 7
 The greatest number that will divide 49, 147 and 322 to leave the same remainder in each case.

10. (1) $\sin \theta = \frac{a}{b}$



$\sec \theta + \tan \theta = \frac{b}{\sqrt{b^2 - a^2}} + \frac{a}{\sqrt{b^2 - a^2}}$

$= \frac{(b+a)}{\sqrt{(b-a)(b+a)}} = \sqrt{\frac{b+a}{b-a}}$

11. (3) The mean proportional of a and b is c then,
 $C = \sqrt{ab}$
 $C^2 = ab \dots(I)$
 The mean proportional of a^2 and b^2 is C^3
 $= \sqrt{a^2 b^2 c^2} = \sqrt{c^4 \times c^2} = C^3$

12. (3) The area of the sector of a circle

$= \frac{22}{7} \times 16 \times \frac{30^\circ}{360^\circ}$
 $= \frac{22}{7} \times \frac{16}{12} = \frac{88}{21} = 4.186 \text{ cm}^2$

13. (4) $\frac{\cos 20^\circ}{\sin 70^\circ} + \frac{\cos \theta}{\sin(90^\circ - \theta)}$
 $= \frac{\cos 20^\circ}{\sin(90^\circ - 20^\circ)} + \frac{\cos \theta}{\cos \theta}$

$= \frac{36x^2}{6} + \frac{66x}{6} + \frac{24}{6} + \frac{8}{6} + \frac{\cos \theta}{\cos \theta}$
 $= 1 + 1 = 2$

14. (1) Speed of boat = 22.5 km/h
 Speed of current = 12.5 km/h
 It takes him 40 minutes to row to a place and back.

$40 \text{ min} = \frac{2}{3} \text{ hr.}$

Let, the distance = D
 ATQ,

$\frac{D}{35} + \frac{D}{10} = \frac{2}{3}$

$\Rightarrow \frac{2D+7D}{70} = \frac{2}{3} \Rightarrow D = \frac{140}{27} \text{ km}$

$\Rightarrow D = 5 \frac{5}{27} \text{ km}$

15. (2) The average of sim - card in the four states / UT in laks is.

$\frac{20+15+25+25+20+15+15+10+20+10+25+5}{4}$

$= \frac{205}{4} \Rightarrow 51.25$

16. (2) Let, radius of the base = r
 ATQ,

$\frac{2}{3} \pi \times 21 \times 21 \times 21 = \pi r^2 h$

$r^2 h = 14 \times 21 \times 21 \dots(I)$
 ATQ,

$\frac{\text{Curved surface area}}{\text{Total surface area}} = \frac{2}{5}$

$\Rightarrow \frac{2\pi r h}{2\pi r(h+r)} = \frac{2}{5} \Rightarrow 5h = 2h + 2r$

$\Rightarrow 3h = 2r$

$\Rightarrow r = \frac{3h}{2} \dots(II)$

From equation (I)

$\frac{9h^2}{4} \times h = 14 \times 21 \times 21$

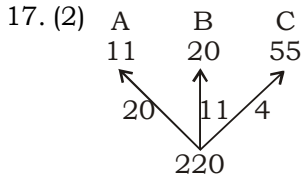
$h^3 = 8 \times 7 \times 7 \times 7$
 $h = 14 \text{ cm}$

From equation (II)

$$r = 3 \times \frac{14}{2}$$

$$\Rightarrow r = 21 \text{ cm}$$

\(\therefore\) The radius of its base 21cm.



If B works daily and A and C support him in alternate days then,

Efficiency of B + A, B + C

They can do work in 2 day \rightarrow 46 work

$$\times 4 \rightarrow \times 4$$

$$\text{in 8 day} \rightarrow 184$$

$$\text{in 1 day} \rightarrow 31 \text{ (B + A)}$$

$$\text{then in 9 day} \rightarrow 215$$

$$\text{The remaining work} = (220 - 215) = 5 \text{ work}$$

The remaining work will be done by B, C

So, The remaining work will

$$\text{be done in } \frac{5}{15} = \frac{1}{3} \text{ days}$$

\(\therefore\) The total work will be finished in $9\frac{1}{3}$ days

18. (4) $6 \overline{) \frac{n}{3}}$ $\left(\begin{array}{l} x \\ 3 \rightarrow \text{Remainder} \end{array} \right.$

We can say that,

$$n = 6x + 3$$

Now,

$$\frac{n^2 + 5n + 8}{6}$$

=

$$\frac{36x^2 + 9 + 36x + 30x + 15 + 8}{6}$$

=

$$\frac{36x^2 + 66x + 24 + 8}{6}$$

=

$$\frac{36x^2}{6} + \frac{66x}{6} + \frac{24}{6} + \frac{8}{6}$$

Remainder = 2 [Because 36, 66, 24 all are divisible by 6 but 8 is not. If we divide 8 by 6 then 2 will be our answer]

19. (2) $\sin 10^\circ - \frac{4}{3} \sin^3 10^\circ$

$$= \frac{1}{3} [3\sin 10^\circ - 4\sin^3 10^\circ]$$

$$= \frac{1}{3} \sin 30^\circ = \frac{1}{3} \times \frac{1}{2} = \frac{1}{6}$$

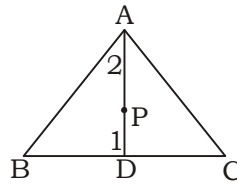
20. (1) Successive discount of 18% and 22%

$$= 18 + 22 - \frac{18 \times 22}{100}$$

$$= 40 - \frac{396}{100}$$

$$= 40 - 3.96 = 36.04\%$$

21. (4)



AD is the median of the triangle ABC. P is the centroid of triangle ABC. then AP : PD = 2 : 1 if, AP = 14 cm then PD will be 7cm.

22. (4) A man loss 15% by selling a mobile for 4,675,

$$\text{So, the C.P is } 4,675 \times \frac{100}{85}$$

$$= 5,500$$

If the mobile selling for 6050Rs then he gain = 6050 - 5550 = 550₹

So, the gain percentage is

$$= \frac{550}{5500} \times 100 = 10\%$$

23. (2) The average of number of students in each subject

$$= \frac{45 + 60 + 30 + 65 + 45}{5} = \frac{245}{5} = 49$$

24. (4) Let, the radius of the circle is r. ATQ,

Area of square = Area of circle

$$\Rightarrow 4 \times 11 = 2 \times \frac{22}{7} \times r$$

$$\Rightarrow 44 = \frac{44}{7} \times r$$

$$\Rightarrow r = 7 \text{ cm}$$

25. (3) The ratio of production of beauty product by A to E is

$$30 : 25$$

$$= 6 : 5$$

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

GENERAL AWARENESS

1. (1) Na_2SO_4 - Sodium Sulphate
 NaOH - Sodium Hydroxide (Caustic Soda)
 NaHCO_3 - Baking Soda

2. (4)

3. (1) Child sex ratio is defined as the number of females per 1000 males in age group 0-6 years. In 2001, it was 927.

Highest - Arunachal Pradesh (972)

Lowest - Haryana (834)

4. (4) Yamini Krishan Murthy was awarded Padam Shree (1968), Padma Bhushan (2001) & Padma Vibhushan (2016).

5. (1) Chanudaro was the only city without citadel.

6. (2) **Organisation** **Head**
IRDAI Debasish Panda
UPSC Manoj Soni
EPFO Neelam S Rao
BIS Pramod Kumar Tiwari

7. (1) Total number of National Parks in India - 106

Wild life Sanctuaries - 565

8. (4) Decomposition rate is quicker, if detritus is rich in nitrogen and water soluble substances like sugar.

9. (3)

10. (4) A Red card is given when two yellow cards are given by the umpire.

After two Red cards the player is punished with Black card.

11. (2) S. Somanath - Chairperson of ISRO

Tarun Kapoor - Adviser to P.M.

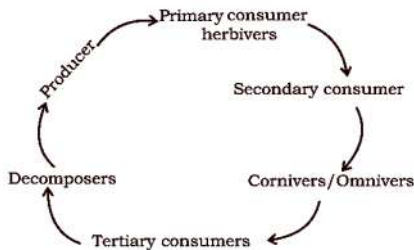
12. (1) Todar Mal was the Finance Minister of Mughal Empire during Akbar's reign.

Nauratans of Akbar - Birbal, Tansen, Abul Fazal, Faizi, Man Singh, Todar Mal, Nullah Do Piazza, Fakir Aziao-Din, Abdul Rahim Khan-I-Khana.

13. (3) Lytton (Viceroy of India) enacted the Vernacular Press Act, 1878, to curtail the freedom of Indian Press and the opposition that had grown due to the second Anglo-Afghan war (1878-80).
14. (1) Silver is the best conductor of electricity.
15. (4) (a) Freedom of speech and expression
(b) To assemble peacefully and without arms
(c) To form associations or unions
(d) To move freely throughout the territory of India
(e) To settle in any part of India.
(f) To practise any profession, occupation.

16. (2)
17. (1) Sarojini Naidu was elected INC president 1925, Kanpur Session.
Annie Besant was the first woman President of INC at Calcutta session 1917.
First Muslim President - Badruddin Tayyabji (1887, Madras)
British - George Yule (1888, Allahabad)
18. (3) Judiciary protects rule of law and ensure supremacy of Law. Legislature passes laws, establishing the government's budget, ratifying treaties, impeaching and removing from office members of the executive and judiciary.
NITI Aayog is an advisory body. It replaced planning Commission.

19. (2)

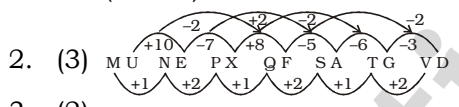


20. (4) **Rabi Crops** - Wheat, Barley, Oats, Grams Mustard, Linseed, etc.
Kharif Crops - Rice, Maize, Millet, Ragi, Pulses, Soybean, Groundnut.
21. (2)

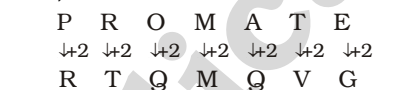
22. (2) Mango showers describe the occurrence of pre-monsoon rainfall.
23. (3) **First Phase** - From mid 1960's to mid 1970's
Second Phase - 1970's to 1980's
Third Phase - 1991 - 2003
HYV seeds was introduced in cotton, oil seeds, millets etc.
24. (4) 25. (2)
1. (1) 2. (4) 3. (1) 4. (4) 5. (1)
6. (2) 7. (1) 8. (4) 9. (3) 10. (4)
11. (2) 12. (1) 13. (3) 14. (1) 15. (4)
16. (2) 17. (1) 18. (3) 19. (2) 20. (4)
21. (2) 22. (2) 23. (3) 24. (4) 25. (2)

GENERAL INTELLIGENCE & REASONING

1. (2) $(8-2)^2 = 6^2 = 36$
 $(9-4)^2 = 5^2 = 25$
 $(20-13)^2 = 7^2 = 49$



2. (3)
3. (2)
- P L A N N E D
↕ ↕ ↕ ↕ ↕ ↕ ↕
R N C N P G F
and,
P R O M A T E
↕ ↕ ↕ ↕ ↕ ↕ ↕
R T Q M Q V G



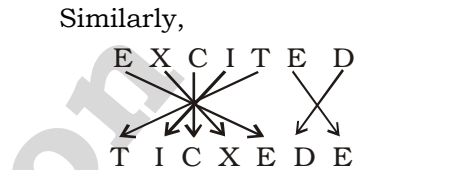
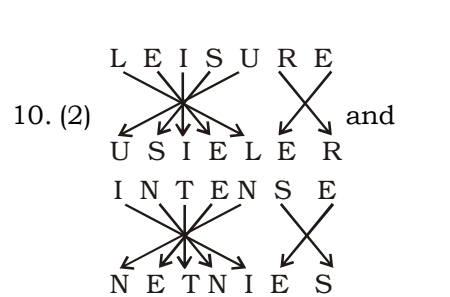
4. (3)
- B E L L
↙ ↘ ↙ ↘ ↙ ↘ ↙ ↘
11 11 4 1
H E A R
↙ ↘ ↙ ↘ ↙ ↘ ↙ ↘
17 26 4 7



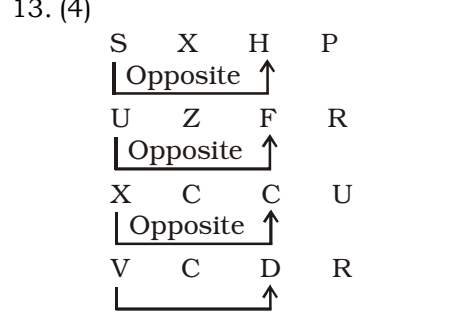
5. (1)
6. (1) $15+5+1-9 \times 4 = 70$
By interchanging \times and $-$
 $15+5+1 \times 9-4 \neq 70$
 $\Rightarrow 15+5 \times 9-4 \neq 70$
 $\Rightarrow 15+45-4 \neq 70$
 $\Rightarrow 11+45 \neq 70$
 $\Rightarrow 56 \neq 70$
So, equation (I) is not correct.

7. (1) Police is for protection of people and minister is for good governance of people.
8. (4) Roated anticlock wise 45° .

9. (4) 67, 78, 71, 82, 75, 86, (79)
- +4 +4 +4
+4 +4 +4



11. (3)
12. (1) 3. Serein
4. Serial
1. Series
2. Serious
5. Serried



14. (1) C # D @ E % Z & Z # M - N * P
- N ↔ P
C⁻ - D⁺ - E⁺ ↔ L⁻ - M⁻
|
Z⁺
- ∴ E is husband of L.

15. (1) P-Q+R
 $P^+ - Q^- - R$
So, P is brother of R.

16. (1) From fig (2) and (3)
- 2 - 5
4 ↙ ↘
3 - 6
2 ↔ 3
3 ↔ 6
4 ↔ 1

17. (2) $5^* 15^* 320^* 2^* 45 = 190$.
putting $\times, +, \div, -$
 $5 \times 15 + 320 \div 2 - 45 = 190$
 $\Rightarrow 75 + 160 - 45 = 190$
 $\Rightarrow 30 + 160 = 190$
 $\Rightarrow 190 = 190$
18. (1) $11^2 - 7^2 = 121 - 49 = 72$

$$8^2 - 5^2 = 64 - 25 = 39$$

$$7^2 - 4^2 = 49 - 16 = 33$$

19. (1) $30 * 4 * 2 * 1 * 121$

Putting $\times, +, -, =$

$$\Rightarrow 30 \times 4 + 2 - 1 = 121$$

$$\Rightarrow 120 + 1 = 121$$

$$\Rightarrow 121 = 121$$

20. (2) Given

$$128 + 139 = 267 \text{ and,}$$

(1) $132 + 135 = 267$

(2) $112 + 215 = 327 \neq 325$

(3) $154 + 211 = 365$

(4) $146 + 151 = 297$

21. (1) $(15)^2 = 225 + 3 = 228 \neq 220$

$$(9)^2 = 81 + 3 = 84$$

$$(13)^2 = 169 + 3 = 172$$

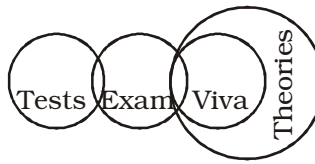
$$(11)^2 = 121 + 3 = 124$$

22. (1) $G \xrightarrow{-1} P \xrightarrow{-1} O \xrightarrow{-1} N \xrightarrow{-1} M$

$$R \xrightarrow{+5} W \xrightarrow{+5} B \xrightarrow{+5} G \xrightarrow{+5} L$$

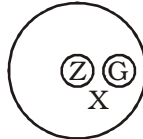
$$M \xrightarrow{-9} D \xrightarrow{-9} U \xrightarrow{-9} L \xrightarrow{-9} C$$

23. (2)



24. (1)

25. (2)



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

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

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

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

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

ENGLISH LANGUAGE AND COMPREHENSION

1. (3) "Future Perfect Tense" should be used as the action will be completed in future before a certain time.

5. (1) Accused takes preposition "of". So 'accused of stealing' is the correct expression.

8 (2) "compel" is incorrectly spelt as "compell". Meaning - to force, to coerce (बिबश करना)

12. (4) "gain experience" is correct replacement. It means - to accumulate experience.

15. (1) "Assiduous" is incorrectly spelt as "assidous". Meaning - Hard - working, industrious, laborious (परिश्रमी)

16. (1) "never admitted" is correct replacement. It means - not accepted.

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

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

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

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

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

Words Meaning in English

Dabbler novice, inexperienced, amateur.

Vernal of, relating to, or occurring in the spring

Meaning in Hindi

नौसिखिया

बसन्त ऋतु सम्बन्धी

