



11. (1)

YEAH  $\xrightarrow[\text{of oppo Letter}]{\text{Place value}}$   $2+22+26+19=69$   
Now,  $69 \times 3 = 207$

BULK  $\xrightarrow[\text{of oppo Letter}]{\text{Place value}}$   $25+6+15+11=62$   
Now,  $62 \times 3 = 186$

Similarly,

CORD  $\xrightarrow[\text{of oppo Letter}]{\text{Place value}}$   $24+12+9+23=68$   
Now,  $68 \times 3 = 204$

12. (3)

13. (1)

14. (3) 3. Maternal

1. Maternity

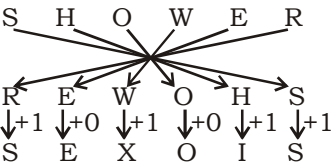
5. Mother

4. Motor

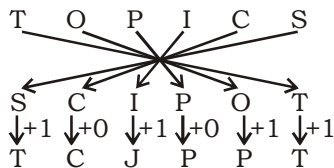
2. Mundane

15. (1) 

So, only conclusion I follows

16. (3) 

Similarly,



17. (3)

18. (4) There are 14 triangles in the given figure.

19. (4)  $6666 - 3333 \Rightarrow \frac{6666}{2} = 3333$

$8888 - 4444 \Rightarrow \frac{8888}{2} = 4444$

$4444 - 2222 \Rightarrow \frac{4444}{2} = 2222$

But,  $3333 - 1111 \Rightarrow \frac{3333}{2} \neq 1111$

20. (1)

$120 \xrightarrow{-10} 110 \xrightarrow{-9} 101 \xrightarrow{-8} 93 \xrightarrow{-7} 86 \xrightarrow{-6} 80$

21. (1)  $7 : 512 \Rightarrow 7+1=(8)^3 = 512$

$11 : 1728 \Rightarrow 11+1=(12)^3 = 1728$

Similarly,

$10 : ? \Rightarrow 10+1 \Rightarrow (11)^3 = 1331$

22. (3)

23. (2)

24. (2) P  $\xrightarrow{+4}$  T  $\xrightarrow{+4}$  X  $\xrightarrow{+4}$  B  $\xrightarrow{+4}$  F

H  $\xrightarrow{-8}$  Z  $\xrightarrow{-8}$  R  $\xrightarrow{-8}$  J  $\xrightarrow{-8}$  B

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

25. (3)  $28,53,78 \Rightarrow 28+78 = \frac{106}{2} = 53$

$34,49,64 \Rightarrow 34+64 = \frac{98}{2} = 49$

Similarly,

$38,40,42 \Rightarrow 38+42 = 80 \Rightarrow \frac{80}{2} = 40$

### ANSWER KEY

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

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

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

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

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

### QUANTITATIVE APTITUDE

1. (1) As the chord OP makes an angle  $90^\circ$  on the circumference of the circle, So the chord is diameter of circle.

The length of chord = length of diameter = 44 cm

2. (3)  $\cos\theta + \sin\theta = \sqrt{2}$

Squaring both sides

$\cos^2\theta + \sin^2\theta + 2\sin\theta \cos\theta = 2$

$1 + 2\sin\theta \cos\theta = 2$

$2 \sin\theta \cos\theta = 1$

$2 = \frac{1}{\sin\theta \cos\theta}$

$\sec\theta \operatorname{cosec}\theta = 2$

3. (3) Let, marked price of trouser = 100

Marked price of jacket = 300

After giving discount of 20%

Selling price of trouser = 80

Again overall selling price =

$400 \times \frac{70}{100} = 280$

$\therefore$  Selling price of jacket = 280

$- 80 = 200$

$\therefore$  Discount =  $(300 - 200) = 100$

$\therefore$  Discount % =  $\frac{100}{300} \times 100 = 33.33\%$

4. (2) Total GDP of countries L and M in  $Y_1 = 205 + 315 = 520$

$\therefore$  Average GDP ( $J_1$ ) =  $\frac{520}{2} = 260$

Total GDP of countries L and

M in  $Y_1 = 115 + 105 = 220$

$\therefore$  Average GDP ( $J_2$ ) =  $\frac{220}{2} = 110$

$\therefore$  Value of  $\frac{J_1}{J_2} = \frac{260}{110} = 2.36$

5. (2) OE is perpendiculars drawn from centre to straight line ABCD.



$OE = \sqrt{(34)^2 - (16)^2} = 30$  cm

$\therefore AE = \sqrt{(50)^2 - (30)^2} = 40$  cm

$\therefore AD = (2 \times 40)$  cm = 80 cm

6. (2)  $p : q = 3 : 5$ ,  $p : r = 2 : 3$

$q : p : r$

$5 : 3 : 3$

$2 : 2 : 3$

$10 : 6 : 9$

Now,

$3P : 4q : 3r$

$(3 \times 6) : (4 \times 10) : (3 \times 9)$

$18 : 40 : 27$

7. (2)  $x + y = 12$

$y + z = 17$

$z + x = 19$

$2(x+y+z) = 48$

$x + y + z = 24$

$\therefore$  Average of  $(x+y+z) = \frac{24}{3} = 8$

8. (2) For simple interest,

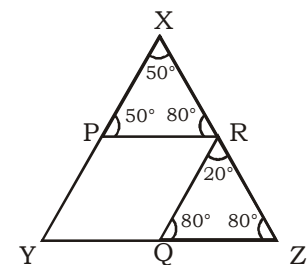
$SI = 7500 \times 2 \times \frac{7}{100}$

$SI = 1050$

$\therefore$  Amount =  $75000 + 1050$

$= 85500$

9. (1)  $\angle PQR = 180^\circ - (80^\circ + 20^\circ) = 80^\circ$



10. (3) Diameter = 50 cm

Radius = 25 cm

Half of length of chord

$= \sqrt{(25)^2 - (7)^2}$  cm

$= 24$  cm

$\therefore$  Length of chord =  $2 \times 24$  cm = 48 cm

11. (1)  $\frac{8 \times 5 \div 25}{7 \div 14 \times 2} - \frac{14 \div 7 - 5}{7 \div 14 - 25}$

$= \frac{8 \times \frac{1}{5}}{\frac{1}{2} \times 2} - \frac{2 - 5}{\frac{1}{2} - 25} = \frac{8}{5} + \frac{3}{-49}$

$$\Rightarrow \frac{392-30}{245}$$

$$= \frac{362}{245}$$

12. (4) To divisible any number by 10 units digit of number must be 0.

The number having unit digit 0 between 501 and 701  $\rightarrow$  510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620 630, 640, 650, 660 670, 680, 690, 700.

$\therefore$  So there are 13 numbers which are divisible by 10 but not by 3.

13. (3) Total sum of invested time on teaching and reading.  
 $= 8 + 6 = 14$  hrs.

Total sum of invested time on sleep and play  $= 7 + 1 = 8$  hrs.  
 $\therefore$  Ratio of time between them  
 $= 14 : 8 = 7 : 4$

14. (2) Income of A  $= 100 + 300 = 400$

Income of B  $= 400 + 800 = 1200$

Income of C  $= 600 + 300 = 900$

Income of D  $= 300 + 200 = 500$

Income of E  $= 1000 + 400 = 1400$

$\therefore$  Correct sequence of income of A, B, C, D, E

$\Rightarrow E > B > C > D > A$

15. (4) For rhombus, We know, Sum of square of diagonal  $= 4 \times \text{side}^2$

$$= 10^2 + 24^2 = 4 \times (\text{side})^2$$

$$= \frac{676}{4} (\text{side})^2$$

$$= 169 = (\text{side})^2$$

Side  $= 13$

$$\therefore \text{Perimeter} = (4 \times 13) \text{ cm} = 52 \text{ cm}$$

16. (2) For 1<sup>st</sup> TV  $\Rightarrow$  CD : SD

$$5 : 4$$

$$\downarrow \times 11 : \downarrow \times 11$$

$$55 : 44$$

$$\text{For 2<sup>nd</sup> TV} \Rightarrow 10 : 11$$

$$\downarrow \times 4 : \downarrow \times 4$$

$$40 : 44$$

Adding 1<sup>st</sup> and 2<sup>nd</sup> ratio of TV

$$55 : 44$$

$$40 : 44$$

$$\hline 95 : 88$$

$$\text{Ratio of CP} \Rightarrow 55 : 40$$

$$11 : 8$$

$$\text{ATQ,} = 19 \equiv 2280$$

$$1 \equiv 120$$

$$11 \equiv 120 \times 11 = 1320$$

$\therefore$  Cost price of TV which was sold at loss is 1320.

17. (1)  $a^2 + b^2 + c^2 = 62$

$$a + b + c = 12$$

$$\text{Now, } (a+b+c) = a^2 + b^2 + c^2 + 2(ab+bc+ca)$$

$$144 - 62 = 2(ab+bc+ca)$$

$$82 = 2(ab+bc+ca)$$

$$164 = 4(ab+bc+ca)$$

$$\therefore 4ab + 4bc + 4ca = 164$$

18. (3) Sum of 15 numbers  $= 53 \times 15 = 795$

$$\text{Sum of 14 numbers} = 14 \times 55 = 770$$

$$\therefore \text{Value of removed number} =$$

$$795 - 770 = 25$$

19. (1)  $x + \frac{1}{x} = \frac{k}{2}$

Squaring both sides

$$x^2 + \frac{1}{x^2} = \frac{k^2}{4} - 2$$

Again squaring both sides.

$$x^4 + \frac{1}{x^4} = \left(\frac{k^2}{4} - 2\right)^2 - 2$$

$$x^4 + \frac{1}{x^4} = \frac{k^4}{16} - k^2 + 4 - 2$$

$$x^4 + \frac{1}{x^4} = \frac{k^4}{16} - k^2 + 2$$

$$x^4 + \frac{1}{x^4} = \frac{k^4 - k^2 + 32}{16}$$

20. (2) Let, efficiency of men is M  
 Efficiency of women is W.

ATQ,

$$(4M + 7W) \times 8 = (7M + 4W) \times 5$$

$$= 32M + 56W = 35M + 20W$$

$$= 3M = 36W$$

$$= M = 12W$$

$$= M : W = 12 : 1$$

$$\text{Total work} = [(4 \times 12) + (7 \times 1)] \times 8$$

$$= (48 + 7) \times 8 = 440$$

$$\therefore \text{Days required by women} =$$

$$\frac{440}{8 \times 1} = 55 \text{ days}$$

21. (4) Ratio of mobile in 2015 to tablets in 2018.

$$= 23 : 23$$

$$= 1 : 1$$

22. (1)  $\text{sinc} = \frac{9}{10}$

$$\therefore \cos^2 c = 1 - \text{sinc}^2 c$$

$$= 1 - \frac{81}{100} \Rightarrow \frac{19}{100}$$

23. (3) Let, total distance of journey  $= 12$  km

$$\text{Time taken for } \frac{1}{3}^{\text{rd}} = \frac{4}{10} \text{ hrs.}$$

$$\text{Time taken for } \frac{1}{4}^{\text{th}} = \frac{3}{15} \text{ hrs.}$$

Time taken for rest journey

$$= \frac{5}{20}$$

$$\therefore \text{Average speed} = \frac{\text{Distance}}{\text{Time}}$$

$$= \frac{12}{\frac{4}{10} + \frac{3}{15} + \frac{5}{20}} \text{ km/h}$$

$$= \frac{12 \times 60}{24 + 12 + 15} \text{ km/h}$$

$$= \frac{240}{17} \text{ km/h}$$

24. (3) Price of 2 table  $= 2400$

$$\therefore \text{Price of 8 table} = 9600$$

$$\therefore \text{Price of 15 chairs} = 9600 \times \frac{6}{5}$$

$$= 11520$$

25. (2)  $\frac{1 + \tan A}{\text{cosec} A} + \frac{1 + \cot A}{\sec A}$

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

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

$$(\sin A + \cos A) \left[ \frac{(\sin^2 A + \cos A) \cos A}{\sin A} \right]$$

$$= \sec A + \text{cosec} A$$

### ANSWER KEY

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

### GENERAL AWARENESS

1. (4) Pannji is situated on the Bank of river Mandvi.

The Banas is a river which lies entirely within the state of Rajasthan. It is a tributary of the Chambal River, itself a tributary of the Yamuna. The river originates in the Veron ka Math situated in Khamnor Hills of the Aravalli Range.

The Luni is the largest river in the Thar Desert. It originates in the Pushkar valley of the Aravalli Range.

- 2.(4) The velocity of sound waves in air is 330 m/s.  
The velocity of sound waves in Aluminium is 6420 m/s.  
The velocity of sound waves in Nickel 2,960 m/s.  
The velocity of sound waves in steel is 5920 m/s. The velocity of sound waves in a vacuum is zero. The velocity of sound waves in water is 1480 m/s.
- 3.(1)  
4.(4)
- 5.(2) The 2022 Durand Cup, also known as IndianOil Durand Cup due to sponsorship ties with Indian Oil Corporation, was the 131st edition of Durand Cup, the oldest football tournament in Asia, and also the first edition since it was recognised by the Asian Football Confederation. This year for the first time the tournament was played in more than one venue, Kolkata, Guwahati and Imphal.  
**Champions** - Bengaluru  
**Best player** - Greg Stewart  
**Best goalkeeper**- Antonio Dylan
- 6.(2) **Dhupgarh** is the highest peak of the Satpura range in Madhya Pradesh.  
**Arma Konda** (Sitamma Konda), is the highest mountain peak of Andhra Pradesh. It is a part of the Eastern Ghats range and located in the Godavari river basin.  
**Reo Purgyl** is the highest mountain peak in the state of Himachal Pradesh
- 7.(2) There are 28 states and 8 Union territories in the country.
- 8.(2) Best Film – Shershaah  
Best Director – Vishnuvardhan  
Best Actor – Ranveer Singh  
Best Actress – Kriti Sanon  
Best Playback Singer – B Praak (Male)  
Best Playback Singer – Asees Kaur (female)
- 9.(3) The first registered vaccine against COVID-19 made by Russia.  
Covishield was made by Oxford–AstraZeneca with Serum Institute of India.  
COVAXINE is made by Bharat Biotech.
- 10.(2) In computing, a **hyperlink**, is a digital reference to data that the user can follow or be guided to by clicking or tapping.  
The **World Wide Web** (WWW), commonly known as the Web, is an information system enabling documents and other web resources to be accessed over the Internet.  
**A joystick**, is an input device consisting of a stick that pivots on a base and reports its angle or direction to the device it is controlling.
- 11.(4) Chiktan Fort – Ladakh  
Rajgad Fort – Maharashtra
- 12.(3) **Article 19** – Protection of 6 rights concerning the freedom of: Speech and expression  
Assembly, Association, Movement, Residence, Profession  
**Article 20** – Protection with respect to conviction for offences  
**Article 21** – Right to life and personal liberty  
**Article 21A** – Right to elementary education  
**Article 22** – Protection against arrest and detention in certain cases.
- 13.(3) Theme for Ozone Layer 2022 is 'Global Cooperation Protecting Life on Earth.'
- 14.(1) Kabir was born in 1398 in Kashi (Varanasi). His writings influenced Hinduism's Bhakti movement, and his verses are found in Sikhism's scripture Guru Granth Sahib, the Satguru Granth Sahib of Saint Garib Das, and Kabir Sagar.
- 15.(3) Venus is called Earth's twin because Venus and Earth are almost the same size, have about the same mass (they weigh about the same), and have a very similar composition (are made of the same material).  
In order of distance from the sun - Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune.  
In order of size - Jupiter, Saturn, Uranus, Neptune, Earth, Venus, Mars and Mercury
- 16.(1) On 12 August 1765, the Mughal emperor appointed the East India Company as the Diwan of Bengal.
- 17.(2) In the 2022 Commonwealth Games, she was part of the Indian Women's fours team, along with (Pinki Singh, Nayanmoni Saikia and Rupa Rani Tirkey) which won Gold beating South Africa in the final, 17-10.
- 18.(2) **Article 31A** - Saving of laws providing for acquisition of estates, etc.  
**Article 31B** - None of the acts placed in the 9th Schedule shall become void on the ground that they violate rights under Part III and no judicial review is possible.  
**Article 31D** - Saving of laws in respect of anti-national activities.
- 19.(1) The memorial having three rhino sculptures was named "Abode of the Unicorns".  
It has one male rhino, a female rhino and a calf.  
National Parks in Assam - Kaziranga National Park, Manas National Park, Dibru - Saikhowa National Park, Nameri National Park, Orang National Park and Tiger Reserve, Dehing Patkai National Park, Raimona National Park
- 20.(1)  
21.(2) **Bhagat Singh** - 'Inquilab Zindabad'  
**Mahatma Gandhi** - Do and Die, Hey Ram, Quit India
- 22.(1) F1: Opens the Help system for the active window.  
F2 – Allows you to rename a selected file or folder.  
F10 – Activates the menu bar of an open application.
- 23.(3)  
24.(4) Godaan – 1936, Nirmala – 1927  
Gaban – 1928, Mansarovar – 1936, Rangbhoomi – 1924, Premashram – 1922, Pratigya – 1927, Lottery – 1933, The world of Premchand – 1969
- 25.(3)

### ANSWER KEY

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