

**ENGLISH LANGUAGE AND COMPREHENSION**

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

**EXPLANATION:-**

5. (3) Replace 'too much' with 'much too'. 'Too much +noun .....much too+ Adjective' is the correct expression.  
 8. (4) 'Modal verb +V<sub>b,f</sub>' is correct structure.  
 9. (2) Article 'the' takes Superlative Degree.  
 11. (2) 'Fantasy' is incorrectly spelt here, means- situations that are not true, that you just imagine.  
 16. (4) Replace 'its' with 'their'. Since 'bacteria' is Plural Noun, it will take a Plural Possessive Adjective. Singular of 'bacteria' is 'bacterium'.

**WORD**

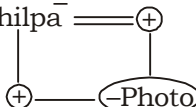
**MEANING IN ENGLISH**

Absolute	Free from imperfection, perfect
Ardent	Showing or having warmth of feeling
Berate	To scold forcefully
Bona fide	Genuine
Canonical	Relating to or allowed by church law
Chastise	Scold
Contemporary	Belonging to the same time as somebody/something else
Credulous	Ready to believe especially on little evidence
Cynical	Having the attitude of a critic
Elucidate	To make clear or plain; explain
Endorse	To say publicly that you give official support or agreement to a plan, statement, decision, etc.
Exhaust	To make somebody very tired
Explicate	To give a complete explanation of
Extol	To praise highly, glorify
Fastidious	Hard to please, snobbish
Incredulous	Feeling or showing an inability to believe something; skeptical
Keelhaul	To scold severely
Legit	Conforming to the rules; legal
Mince	To cut or chop into very small pieces
Mulct	To punish by a fine
Obsolete	Something that is no longer in use.
Oracular	Of or connected with an oracle; having a hidden meaning
Orthodox	Holding established beliefs especially in religion
Sceptical	Having doubts about something others accept
Scoffing	An expression of scorn or mockery
Versatile	One who adapts oneself readily to various situations
Vogue	Popular acceptance

**MEANING IN HINDI**

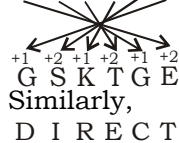
पूर्ण
उत्साही
जोर से डाँटना
प्रामाणिक
धर्मवैधानिक
डाँटना
समकालीन
विश्वासप्रवणता
निंदक
स्पष्ट करना
समर्थन करना
थका देना
बयान करना
प्रशंसा करना
दुराराध्य, तुनकमिजाज
विश्वास न होना
डाँटना
वैध
काटकर टुकड़े करना
जुर्माना लगाना
अप्रचलित
देववाणी से संबंधित; रहस्यमय
रूढ़िवादी
संशयी, संशयवादी
उपहास
बहुमुखी
प्रचलन

**GENERAL INTELLIGENCE & REASONING**

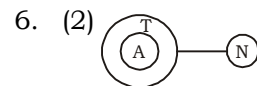
1. (3)  
 2. (3) Shilpa  $\bar{=}$   $\oplus$   
  
 Son of shilpa is Brother of that girl in photo.  
 3. (3)  $\square$   $\bigcirc$  A F = 8  $\square$  6  $\bigcirc$   
 $\square$  I  $\triangle$  K = 5  $\triangle$  0  $\square$   
 $\bigcirc$  C K = 0  $\bigcirc$  4  $\triangle$   
 J E A N = 9 4 7 2

L  $\rightarrow$  3,                      C  $\rightarrow$  1  
 O  $\rightarrow$  8, So code for 'LOC'  $\rightarrow$  381

4. (4) D E S I R E



5. (4)  $\underline{r}$   $\underline{m}$   $\underline{s}$   $\underline{k}$   $\underline{t}$  p/r  $\underline{m}$   $\underline{s}$   $\underline{k}$   $\underline{t}$  p/r  $\underline{m}$   $\underline{s}$   
 $\underline{k}$   $\underline{t}$  p/r  $\underline{m}$   $\underline{s}$   $\underline{k}$   $\underline{t}$   $\underline{p}$



7. (4) 29, 31, 37  $\rightarrow$  Consecutive prime numbers.  
 11, 12, 17  $\rightarrow$  Consecutive prime numbers.  
 Similarly,  
 19, 23, 29  $\rightarrow$  Consecutive prime numbers.  
 8. (3) 393, 342, 564  $\rightarrow$   $\frac{342}{2} = 171$   
 + 393 = 564

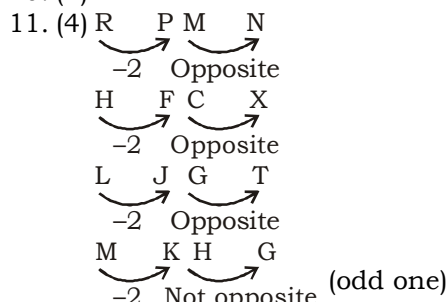
$$287, 82, 328 \rightarrow \frac{82}{2} = 41 + 287 = 328$$

Similarly,

$$237, 294, 384 \rightarrow \frac{294}{2} = 147 + 237 = 384$$

9. (3) Baht is the official currency of Thailand. Similarly, Yuan is the official currency of Thailand.

10. (4)



12. (2)  $12 + 4 - 2 \times 5 \div 4$

Interchanging  $\times, -$  and  $+, \div$

$$12 \div 4 \times 2 - 5 + 4 = 3 \times 2 - 5 + 4 = 6 - 5 + 4 = 1 + 4 = 5$$

13. (3)  $7 : 31$   
 $\times 4+3$

Similarly,  $11 : 47$   
 $\times 4+3$

14. (3)

15. (4) Except for option 4, all are animals. A stable is a place where horses live.

16. (3) Spanner is a tool used to provide Grip for mechanical advantages. Similarly, the loudspeaker is a tool used to amplify the sound.

17. (2)  $\frac{6}{2} \xrightarrow{\text{opposite}} \frac{4}{1}$   
 $\frac{2}{7} \xrightarrow{\text{opposite}} \frac{1}{5}$

18. (4) R  $\xrightarrow{-1}$  Q  
T  $\xrightarrow{-2}$  R  
Z  $\xrightarrow{-1}$  Y  
Similarly, O  $\xrightarrow{-2}$  M

19. (1)

$$(133, 144, 288) \rightarrow (133+144)+11 \rightarrow 288$$

$$(127, 138, 276) \rightarrow (127+138)+11 \rightarrow 276$$

$$(169, 180, 360) \rightarrow (169+180)+11 \rightarrow 360$$

20. (2)

21. (1)  $\frac{1}{4} \xrightarrow{\text{opposite}} \frac{5}{6}$   
 $\frac{4}{2} \xrightarrow{\text{opposite}} \frac{6}{3}$

22. (1)

23. (3)  $81 \xrightarrow{+13} 94 \xrightarrow{+26} 120 \xrightarrow{+39} 159 \xrightarrow{+52} 211 \xrightarrow{+65} 276$

24. (1) 63C9A16B32D3C8  
Putting the value of A, B, C D  
 $63 \div 9 + 16 - 32 \times 3 \div 8$

$$= \frac{63}{9} + 16 - \frac{32 \times 3}{8} = 7 + 16 - 12 = 11$$

25. (4)

A	A
G—H	I—J

So, H is opposite to J

### ANSWER KEY

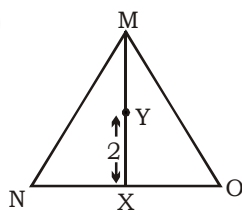
1. (3) 2. (3) 3. (3) 4. (4) 5. (4)  
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11. (4) 12. (2) 13. (3) 14. (3) 15. (4)  
16. (2) 17. (2) 18. (4) 19. (1) 20. (2)  
21. (1) 22. (1) 23. (3) 24. (1) 25. (4)

### QUANTITATIVE APTITUDE

1. (4) Speed of I<sup>st</sup> train =  $\frac{300}{20} = 15$  m/s  
Let speed of II<sup>nd</sup> train =  $x$  m/s  
ATQ,  
 $(300 + 300) = (15 + x) \times 25$   
 $600 = (15 + x) \times 25$   
 $15 + x = 24$   
 $x = 9$  m/s

2. (3) I. The ratio of population of  $S_1$  to the population of  $S_2$  in the year  $y_1 = S_1 : S_2$   
 $300 : 600$   
 $1 : 2$   
II. The population of  $S_1$  in the year 3 = 350  
The population of  $S_2$  in the year 3 = 250  
 $\therefore$  % of population of  $S_1$  to population of  $S_2$  in  $Y_3$   
 $= \frac{350}{250} \times 100 = 140\%$

3. (2)

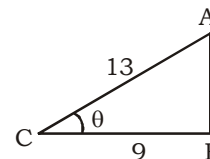


As we know centroid divides the median in 2 : 1,  
 $\therefore MY : YX = 2 : 1$   
 $MY = 2 \times 12 = 24$   
Then,  $MX = 24 + 12 = 36$  cm

4. (3) I.  $\frac{1}{2} + \frac{1}{6} + \frac{1}{12}$   
 $\Rightarrow \frac{6+2+1}{12} = \frac{9}{12} = \frac{3}{4}$

II.  $\frac{1}{6} + \frac{1}{12} + \frac{1}{20}$   
 $\Rightarrow \frac{10+5+6}{60} = \frac{21}{60} = \frac{7}{20}$

5. (2)  $\cos \theta = \frac{9}{13}$



From Pythagorean theorem  
 $AB^2 = AC^2 - CB^2$   
 $= 169 - 81$   
 $= 88$

$AB = 2\sqrt{22}$   
Then,

$$\operatorname{cosec} \theta = \frac{13}{2\sqrt{22}} \times \frac{2\sqrt{22}}{2\sqrt{22}} = \frac{13\sqrt{22}}{44}$$

6. (2) Let

Length of cuboid = 1  
Breadth of cuboid =  $b$   
Height of cuboid =  $h$   
According to the question  
 $1 + b = 4$  ... (i)  
and  
 $1 = 3b$  ... (ii)

$$h = \frac{1+b}{2} = \frac{4}{2} = 2$$

From equation (i), (ii)  
 $3b + b = 4$   
 $b = 1$   
 $1 = 3b$   
 $h = 2$

The total surface area of the cuboid =  $2(lb + bh + hl)$   
 $= 2(3 \times 1 + 2 \times 1 + 3 \times 2)$   
 $= 2(3 + 2 + 6)$   
 $= 22 \text{ cm}^2$

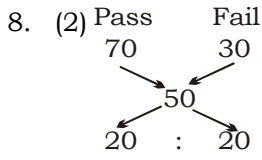
7. (1) Selling price of mixture per kg = 80

$\therefore$  Cost price of mixture per

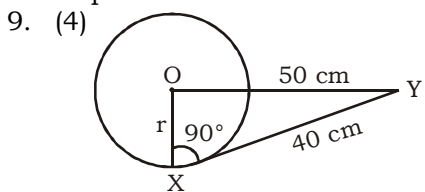
$$\text{kg} = \frac{80}{125} \times 100 = 64$$

Tea<sub>1</sub> : Tea<sub>2</sub>

$$\begin{array}{c} 60 : 70 \\ \swarrow \quad \searrow \\ 64 \\ \swarrow \quad \searrow \\ 6 : 4 \\ \Rightarrow 3 : 2 \end{array}$$



The number of students who passed the examination = 60



From Pythagorean theorem  
 $r^2 = 50^2 - 40^2$   
 $r^2 = 900$   
 $r = 30$  cm

10. (3) According to the question  
 Let mark price = 100%  
 $9\% - 6\% = 3\%$   
 $1\% = 10$   
 $100\% = 1000$

11. (2)  $\sin m + \sin n = P$   
 Squaring both sides  
 $\sin^2 m + \sin^2 n + 2\sin m \sin n = P^2$   
 $\sin m \times \sin n$

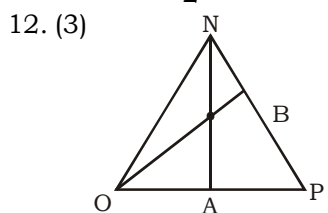
$$= \frac{P^2 - \sin^2 m - \sin^2 n}{2} \dots(i)$$

$\cos m + \cos n = q$   
 Squaring both sides  
 $\cos^2 m + \cos^2 n + 2\cos m \times \cos n = q^2$   
 $\cos m \times \cos n$

$$= \frac{q^2 - \cos^2 m - \cos^2 n}{2} \dots(ii)$$

Adding equation (i), (ii)  
 $\sin m \times \sin n + \cos m \times \cos n$   
 $= \frac{P^2 - \sin^2 m - \sin^2 n + q^2 - \cos^2 m - \cos^2 n}{2}$

$$= \frac{P^2 + q^2 - 2}{2}$$



As we know, the centroid divides the median in 2 : 1  
 For median NA,  
 $3 \equiv 15$   
 $1 \equiv 5$   
 $2 \equiv 10$   
 $NS = 10$   
 $SA = 5$   
 Similarly, For median OB,  
 $OS = 10$

SB = 5  
 Right angle  $\Delta SOA$ ,  $\angle S = 90^\circ$   
 OA = hypotenuse  
 $= \sqrt{10^2 + 5^2} = \sqrt{125}$   
 $= 5\sqrt{5}$  cm

13. (2) Let principal = P  
 Time = 5 years  
 $SI = 4P - P = 3P$

$$SI = \frac{P \times R \times T}{100}$$

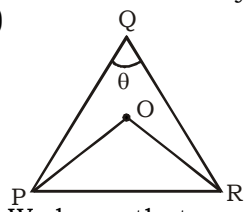
$$3P = \frac{P \times R \times 5}{100}$$

$R = 60\%$   
 ATQ,  
 After 15 years

$$SI = \frac{P \times 60 \times 15}{100}$$

$SI = 9P$   
 Certain sum becomes 10 times itself in 15 years.

14. (2)



We know that,

$$POR = 90^\circ + \frac{\angle \theta}{2}$$

$$120^\circ = 90^\circ + \frac{\angle \theta}{2}$$

$$30^\circ = \frac{\angle \theta}{2}$$

$$\angle \theta = 60^\circ$$

15. (1) Divisibility rule for 9  $\Rightarrow$  sum of digits must be divisible by 9  
 Sum of digits =

$$\frac{8 + 4 + P + P + 1 + 5 + 3 + P}{9}$$

$$= \frac{21 + 3P}{9} \quad (P = 2)$$

16. (1)  $m^2 - n^2 = 21$   
 $(m + n)(m - n) = 21$   
 $[\because a^2 - b^2 = (a + b)(a - b)]$   
 $(m + n)(m - n) = 21$   
 $(m + n) \times 3 = 21$   
 $m + n = 7$

17. (1) Let income of Q = 100%  
 Income = Expenditure + Solving  
 $P \Rightarrow 150\% = 48\% + 102\%$   
 $Q \Rightarrow 100\% = 80\% + 20\%$   
 $\therefore$  % of P saves on his own

$$\text{income} = \frac{102}{150} \times 100\% = 68\%$$

18. (1)  $a + b = 24$ ,  $8ab = 256$   
 $ab = 32$

$a + b = 24$   
 Squaring both sides  
 $(a + b)^2 = 24^2$   
 $a^2 + b^2 + 2 \times 32 = 576$   
 $a^2 + b^2 = 576 - 64$   
 $a^2 + b^2 = 512$

Then,  
 $3a^2 + 3b^2 = 512 \times 3 = 1536$

19. (2) We know Profit = SP - CP  
 Or, 9 notebook = 14 notebook - CP  
 $\therefore$  CP = 5 notebook  
 cost price of one notebook is = ₹1

According to the question

$$\frac{9}{5} \times 100 = 180\%$$

20. (3) 2021  $\Rightarrow 70 - 86 = -16$ (loss)  
 2019  $\Rightarrow 45 - 67 = -22$ (loss)

$$2020 \Rightarrow \frac{65 - 50}{50} \times 100 = 30\%$$

21. (3) Average production of company O in the period

$$2019 - 2021 = \frac{15 + 18 + 31}{3}$$

$$= \frac{64}{3}$$

The average production of company M in the period

$$2019 - 2021 = \frac{21 + 33 + 19}{3}$$

$$= \frac{73}{3}$$

Ratio of average production of company O in period 2019-21 to the average production of company M in period 2019-21 = 64 : 73

22. (1) I. The total number of male teachers = 260 + 280 + 270 + 250 + 230 = 1290

The total number of female teacher = 280 + 270 + 220 + 210 + 230 = 1210  
 % of total male teacher to total female teachers

$$= \frac{1290}{1210} \times 100 = 106.61$$

II. The number of female teachers in school E = 280  
 The number of male teacher in school I = 230  
 % of number of female teachers in school E to number of male teachers in school I

$$= \frac{50}{230} \times 100 = 21.73$$

23. (1) 
  
 A — 30 — 1 — Eff. — 30
   
 B — 15 — 2 —
   
 Total efficiency of A and B = 3 units
   
 B alone can finish the work in 8 days =  $8 \times 2 = 16$  units
   
 Remaining work =  $30 - 16 = 14$  units
   
 A alone finish the remaining work =  $\frac{14}{1} = 14$  days

24. (2)  $6^x = 3^y = 2^z = K$  (say)

Therefore,

$$6 = \frac{1}{K^x}$$

$$3 = \frac{1}{K^y}$$

$$2 = \frac{1}{K^z}$$

$$\text{Now, } 3 \times 2 = 6$$

$$\text{Or, } K^y \times K^z = K^x$$

$$\text{Or, } \frac{1}{K^{y+z}} = \frac{1}{K^x}$$

$$\text{Or, } \frac{1}{x} = \frac{y+z}{yz}$$

$$\text{Or, } \frac{1}{x} = \frac{1}{y} + \frac{1}{z}$$

$$\text{Or, } \frac{1}{y} + \frac{1}{z} - \frac{1}{x} = 0$$

25. (4)  $\frac{\cot \theta + \operatorname{cosec} \theta - 1}{\cot \theta - \operatorname{cosec} \theta + 1}$

$$\Rightarrow \frac{\cot \theta + \operatorname{cosec} \theta - (\cos^2 \theta - \cot^2 \theta)}{\cot \theta - \operatorname{cosec} \theta + 1}$$

$$\Rightarrow \frac{(\cot \theta + \operatorname{cosec} \theta) - (\cot \theta + \operatorname{cosec} \theta)(\operatorname{cosec} \theta - \cot \theta)}{\cot \theta - \operatorname{cosec} \theta + 1}$$

$$\Rightarrow \frac{(\cot \theta + \operatorname{cosec} \theta)(1 - \operatorname{cosec} \theta + \cot \theta)}{\cot \theta - \operatorname{cosec} \theta + 1}$$

$$\Rightarrow \operatorname{cosec} \theta + \cot \theta$$

### ANSWER KEY

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

### GENERAL AWARENESS

1. (2) **Visual Programming Language:** Scratch, Blockly, LabVIEW, Alice, App Inventor, and Kodu are examples of visual programming languages.

**Object-Oriented Language:** Java, C++, Python, Ruby, PHP, and Smalltalk are examples of object-oriented programming languages.

**Business Data Processing:** CO-

BOL (Common Business Oriented Language), RPG (Report Program Generator), PL/I (Programming Language One), and Fortran (Formula Translation) are examples of programming languages used in business data processing.

**String and List Processing:** Python, Ruby, and Perl are examples of programming languages that have built-in features and libraries for string and list processing.

2. (1) Market Based Economic Dispatch (MBED) is new approach towards power distribution to help distribution companies save costs and transition to a new form of power market.

Minister of Power - R.K Singh  
 Ministry of Micro, Small and Medium Enterprises - Narayan Rane

3. (1)

4. (3) Kanwar Lake: It is the largest freshwater oxbow lake in Asia, located in Bihar.

Salim Ali Lake: It is a freshwater lake located in the city of Aurangabad, Maharashtra. The lake is named after the famous Indian ornithologist Salim Ali and is home to many species of birds.

Hussain Sagar: It is a heart-shaped lake located in the city of Hyderabad.

Periyar Lake: It is an artificial lake created by the construction of the Mullaperiyar Dam across the Periyar River in Kerala.

5. (2)

6. (2) L, S and N are transverse waves.

7. (3) Twinkle Khanna - 'The Legend of Lakshmi Prasad', 'Pyjamas Are Forgiving', 'Mrs Funnybones', and 'The Book of Candlelight'.

8. (1) Team Australia is leading the Commonwealth games 2022 Medal Tally with 67 gold medals and team India is at 4th Position. India won - 22(gold) , 16(silver) and 23 (Bronze)

Weightlifter Mirabai Chanu won India's first gold medal in Commonwealth Games 2022 after she topped the 49kg category.

Paddler Sharath Kamal won India's last gold medal in Commonwealth Games 2022 with a gold medal in the Table Tennis men's singles competition.

9. (2) R. Hari Kumar - Chief of the Naval Staff of India

Lieutenant General Vinod - Principal Adviser in the Ministry of Defence.

Manoj Pande - Chief of the Army Staff

10. (4)

11. (4) Windows logo key + M: Minimizes all open windows and displays the desktop.

Windows logo key + K: Opens the Connect pane to connect to wireless displays and audio devices.  
 Windows logo key + N: Opens the Action Center.

12. (1) World Environment Day -5 June  
 Theme for 2023 is Solutions to Plastic Pollution

13. (3) Ganga Dussehra is a Hindu festival that is celebrated to mark the descent of the River Ganga on Earth. It is observed on the 10th day (Dashami) of the waxing moon (Shukla Paksha) in the Hindu month of Jyeshtha.

14. (4)

15. (4)

16. (3) Regulation of labour and safety in mines and oilfields is under the Union List in the Seventh Schedule

17. (2) The Nizam of Hyderabad was the first to accept a well-framed subsidiary alliance in 1798. After the Third Anglo-Maratha War (1817-19).

Other states also accepted this alliance, including Tanjore/Mysore (1799), Awadh (1801), Peshwa (1802), Bhonsle (1803), Scindia (1804), Singrauli (1814), Jaipur Jodhpur(1818) .

18. (1) Summer Olympic Games 2024 - Paris

Summer Olympic Games 2032 - Brisbane

19. (4)

20. (4)

21. (1) Meghalaya's Living Root Bridges included in UNESCO world heritage site tentative.

Sundarbans National Park and Mountain Railways of India(shared) are the UNESCO World Heritage Site in West Bengal.

Kaziranga National Park and Manas Wildlife Sanctuary are the UNESCO World Heritage Site in Assam.

22. (1) Lord William Bentick was the last Governor-General of Bengal and first Governor-General(1834 to 1835) of India.

23. (3) 24. (3)

25. (1) 30th Amendment 1972 - Change the basis for appeals in Supreme Court of India in case of Civil Suits from value criteria to one involving substantial question of law.

### ANSWER KEY

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