ENGLISH LANGUAGE AND COMPREHENSION

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

EXPLANATION:-

4. (4) Replace 'Near' with 'Nearly'. We need an Adverb here.

5. (4) We need an Adverb (severely) to modify the verb (affected).

8. (3) In imaginary situation, 'were' is used with all the Subjects.

13. (2) 'Don't/Doesn't +V$_1$' is the correct structure.

15. (1) 'Fluffy' is incorrectly spelt here, means- being light and soft or airy.

16. (2) Replace 'meet' with 'meeting'. 'Look forward to' is followed by V$_{-ing}$ form of the verb.

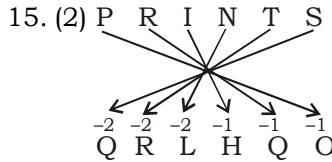| WORD	MEANING IN ENGLISH	MEANING IN HINDI
Bigot	A person with very strong, unreasonable beliefs or opinions and who will not listen to or accept a different opinion.	दूसरों के विचारों के प्रति असहिष्णु; हठधर्म
Circuitous	(Used about a journey or route) long and not direct	(यात्रा या मार्ग) लंबा तथा घुमावदार; चक्करदार
Clandestine	Secret	गुप्त
Commute	To travel a long distance from home to work every day	प्रतिदिन निवास स्थान से कार्य-स्थान तक यात्रा करना
Compensatory	Of a payment intended to recompense someone who has experienced loss, suffering, or injury	मुआवजा संबंधित
Corrective	Intended to make something right that is wrong	सुधारात्मक
Deviant	Different from what most people consider to be normal and acceptable	असामान्य
Devious	Clever but not honest or direct	चालबाज, छली
Fad	Apractice or interest followed for a time with exaggerated zeal, Craze, Sensation	सनक
Gloom	Feeling of being sad and without hope	निराशापूर्ण उदासी
Iridescent	Showing many bright colours that seem to change in different lights	रंगबिरंगा, सतरंगा, रंगदीप्ति
Juggler	A person who juggles to entertain people	करतब दिखाने वाला
Monochromatic	Containing or using only one colour.	एकरंगा
Nacreous	Exhibiting lustrous or rainbow–like colours.	चमकदार या इंद्रधनुष जैसे रंगों का प्रदर्शन
Orphan	A child whose parents are dead	अनाथ
Outspoken	Saying exactly what you think or feel although you may shock or upset other people	मुँह-फट, स्पष्ट वक्ता
Pale	Deficient in colour or intensity of colour	फीका
Posthumous	Given or happening after somebody has died	मरणोपरांत, निधनोत्तर
Pseudonym	A fictitious name	उपनाम
Restorative	making you feel better, healthier and stronger	स्वास्थ्यवर्द्धक, बलवर्द्धक
Serpentine	of or resembling a serpent (as in form or movement)	टेढ़ा, साँप जैसे आकार का
Sluggish	slow, Lazy	सुस्त

1. (4) (A(T)H)
   So, no conclusion follows.

2. (2) $56885 - 11377 \Rightarrow \dfrac{56885}{5} = 11377$

   $74235 - 14847 \Rightarrow \dfrac{74235}{5} = 14847$

   $82695 - 16539 \Rightarrow \dfrac{82695}{5} = 16539$

   But, $38515 - 7701 \Rightarrow \dfrac{38515}{5} =$

   $7703 \neq 7701$

3. (2) T $\underline{-7}$ M $\underline{-7}$ F $\underline{-7}$ Y $\underline{-7}$ **R**
   R $\underline{-5}$ M $\underline{-5}$ H $\underline{-5}$ C $\underline{-5}$ **X**
   A $\underline{-9}$ R $\underline{-9}$ I $\underline{-9}$ Z $\underline{-9}$ **Q**
   P $\underline{-11}$ E $\underline{-11}$ T $\underline{-11}$ I $\underline{-11}$ **X**

4. (2)
   34   71   108   145   **182**   219
   (+37 +37 +37 +37 +37)

5. (1) Hexagon has six sides. Similarly, a Rectangle has four sides.

6. (4) Rinku → Mother (lady)
        ↓   ↑
        Son ↔ Sister
   ∴ Sister's mother is wife of Rinku.

7. (1) **K L I O**   R S P T
   11 12 9 15   18 19 16 20
   (+1 −3 +6)   (+1 −3 +4)
   V W T X   H I F J
   22 23 20 24   8 9 6 10
   (+1 −3 +4)   (+1 −3 +4)

8. (2)
9. (3)
10. (1) P   M
       +2↓ +2↓
        R   O
   Similarly, B   C
             +2↓ +2↓
              D   E

11. (4) $10 \times 8 \div 6 - 2 + 4$
   Interchanging ÷ and −, 4 and 8-
   $10 \times 4 - 6 \div 2 + 8$
   $= 10 \times 4 - 3 + 8$
   $= 40 - 3 + 8 = 45$

12. (2) $\dfrac{ONLINE}{6 \text{ letters}} + \dfrac{THEIR}{5 \text{ letters}} = 11$
   Sum of letters = 6 + 5 = 11

   $\dfrac{FREE}{4 \text{ letters}} + \dfrac{NEW}{3 \text{ letters}} = 7$
   Sum of letters = 4 + 3 = 7

Similarly,
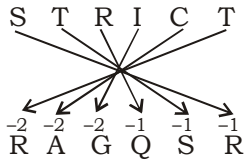$\dfrac{HELP}{4 \text{ letters}} + \dfrac{STUDENTS}{8 \text{ letters}} = 12$
Sum of letters = 4 + 8 = 12

13. (1) 182, 79, 378 ⇒
14. (2) 11 Cycles are not pedals.
15. (2) P   R   I   N   T   S
       (arrows)
       −2 −2 −2 −1 −1 −1
        Q   R   L   H   Q   O
   Similarly,
        S   T   R   I   C   T
       (arrows)
       −2 −2 −2 −1 −1 −1
        R   A   G   Q   S   R

16. (4) $9 - 810 \Rightarrow (9)^2 = 81 \times (9 + 1) = 810$
   $11 - 1452 \Rightarrow (11)^2 = 121 \times (11 + 1) = 1452$
   $7 - 392 \Rightarrow (7)^2 = 49 \times (7+1) = 392$
   But,
   $13 - 2368 \Rightarrow (13)^2 = 169 \times (13 + 1) = 2366 \neq 2368$

17. (2) 13@2#5=10,   43#9@16=50
   ⇒ 13 + 2 − 5   ⇒ 43 − 9 + 16
   ⇒ 15 − 5   ⇒ 59 − 9
   ⇒ 10   ⇒ 50
   Similarly, 8@6#3
       = 8 + 6 − 3 = 11

18. (1)
19. (3) Lucknow is the capital of UP. Similarly, Kolkata is the capital of West Bengal.
20. (2) Other than Karachi, every city is the capital of respective countries.
21. (4)
22. (3) 4. Layout
       2. League
       1. Lean
       3. Lecture
       5. Leftist
23. (3) 319 : 552 ⇒ 319 + 233 = 552
   146 : 379 ⇒ 146 + 233 = 379
   Similarly,
   ? : 774 ⇒ 774 − 233 = 541
24. (2)
25. (2) There are 26 quadrilaterals.

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

1. (3) $\tan A = \dfrac{3}{7}$ Or, $\cot A = \dfrac{7}{3}$

   ∴ $\text{Cosec} A = \sqrt{1 + \cot^2 A}$

   Or, $\text{cosec} A = \sqrt{1 + \dfrac{49}{9}}$

   $\text{cosec} A = \sqrt{\dfrac{58}{9}}$

   $\text{cosec} A = \dfrac{\sqrt{58}}{3}$

2. (1) Let, speed of man = S m/s
   ∴ Speed of train = 8S m/s
   ATQ,
   $\dfrac{1800}{(8S + S)} = 10$

   Or, $\dfrac{1800}{90} = S$
   Or, S = 20

   ∴ Speed of train $= 20 \times 8 \times \dfrac{18}{5}$ km/h
   = 576 km/h

3. (4) Distance of chord RS from centre = 20 cm

   Half of length of chord $= \dfrac{30}{2}$ cm
   = 15 cm

   ∴ Radius $= \sqrt{(15)^2 + (20)^2}$ cm
   = 25

   ∴ Diameter = (25 × 2) cm
   = 50 cm

4. (3) Total sales of branches B_2, B_4, B_6, in year 2001 = 65 + 95 + 80 = 240

   ∴ Average sales $= \dfrac{240}{3} = 80$

   Total sales of branches B1, B3, B5 in year 2001 = 105 + 110 + 95 = 310

   ∴ Average sales $= \dfrac{310}{3}$

   ∴ % of average sales by B_2, B_4, B_6 to average sales by B_1, B_3, B_5.

   $= \dfrac{80 \times 3}{310} \times 100$
   = 77.41%

5. (2) $\dfrac{(17)^3 - (7)^3}{17^2 + 7^2 + k} = 10$

   Or, $\dfrac{(17-7)\left[(17)^2 + (7)^2 + (17 \times 7)\right]}{17^2 + 7^2 + k}$

Or, 10 (289 + 49 + 119) =
2890+490 + 10k
k = 119

6. (4) $4^2 - 3^2 + 6^2 - 5^2 + 8^2 - 7^2$
$+...........+92^2 - 91^2$
= 7 + 11 + 15 + 19 + ... +183
Ist term (a) = 7
Difference (d) = 4
Last term t_n = 183
Number of terms = n (say)
We know
Last term t_n = a + (n − 1) d
Or, 183 = 7 + (n − 1) 4
Or, n = 45
∴ Sum of nth term,

S_n = [2a + (n − 1) d] $\frac{n}{2}$

[2 × 7 + (45 − 1)4] × $\frac{45}{2}$

= 4275

7. (1) Ratio of share of P and Q +
R = 4 : 7 (4 +7 = 11 × 7)
= 28 : 49
Ratio of share of Q and P + R =
2 : 5 (2 + 5) = 7 × 11
= 22 : 55
∴ P : Q : R
= 28 : 22 : 27

∴ Share of R = $\frac{27}{77}$ ×43120

= 27 × 560 ⇒ 15120

8. (2) Number of girls in school A
= 200
Number of girls in school F =
100
∴ % of number of girls in A to
number of girls in school F

= $\frac{200}{100}$ ×100 = 200%

9. (1) Ratio of cost price and
marked price = 100 : 120
↓−12
108
∴ Profit = 108 − 100 = 8

∴ Profit % = $\frac{8}{100}$ ×100 = 8%

10. (3) Let, the side of the
converted cube = l cm
Volume of cuboid = $6^3 + 8^3 +$
10^3 = 1728
ATQ, l^3 = 1728
Or, l^3 = $(12)^3$
l = 12
∴ Side of converted cube = 12
cm

11. (2) Let, marks obtained by x = a
Marks obtained by y = b
Sum of marks obtained by x
and y = a + b.

∴ Average of marks = $\frac{a+b}{2}$

ATQ, $\frac{a+b}{2}$ + 35 = $\frac{85+b}{2}$

a + b + 70 = 85 + b
a = 15
∴ Marks obtained by x is 15.

12. (2) The ratio of cost price and
selling price of P and Q
respectively = 100 : 130
The ratio of cost price and
selling price of Q and R
respectively = 130 : 156
∴ Ratio of cost price of P and
R = 100 : 156
= 25 : 39

13. (2) Interest earned = 13200 −
12000 = 1200
Simple interest-

SI = 12000× $\frac{R}{100}$ ×2

R = $\frac{1200 \times 100}{2400}$

R = 5
For double interest

SI = 12000× $\frac{10}{100}$ ×2

SI = 2400
∴ Amount = 12000 + 2400
= 14400

14. (4) $\frac{\tan\theta - \sec\theta +1}{\tan\theta + \sec\theta -1}$

If we consider θ = 45°

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

Now, from options, we will get

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

15. (4) A = $\frac{18 \div 9 \times 4}{15 \div 3 \times 5}$ ⇒ $\frac{2 \times 4}{5 \times 5}$ ⇒ $\frac{8}{25}$

B = $\frac{18 \div 36 \times 3 + 5 \times 1 - 6}{18 \div 6 \times 20 - 3 \times 4 + 12}$

B = $\frac{\frac{3}{2} + 5 \times 1 - 6}{3 \times 20 - 3 \times 4 + 12}$

B = $\frac{\frac{3}{2} + 5 - 6}{60 - 12 + 12}$

B = $\frac{\frac{3+10-12}{2}}{60}$ ⇒ $\frac{1}{120}$

Now,
A + B

= $\frac{8}{25}$ + $\frac{1}{120}$ ⇒ $\frac{(8 \times 24) + 25}{600}$

= $\frac{197}{600}$
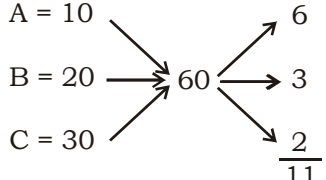
16. (3) Ratio of income,
expenditure and savings
= 100 : 50 : 50
↓ ↓ ↓
110   55   55
∴ Increased savings = 55 − 50
= 5

∴ Increased % = $\frac{5}{50}$ ×100 = 10%

17. (1) We know, for two identical
circles intersect each other
such that each passes through
the centre of the other,
Length of chord = $\sqrt{3}$ × radius
Or, Radius = 16
∴ Radius of each circle 16 cm.

18. (4) A = 10 ↘ 6
B = 20 → 60 → 3
C = 30 ↗ $\frac{2}{11}$

A Earns = $\frac{6}{11}$ ×1100 = 600

B earns = $\frac{3}{11}$ ×1100 = 300

C earns = $\frac{2}{11}$ ×1100 = 200

∴ Earning of A and C exceeds
from earnings of B = 600 + 200
− 300 = 500

19. (3) Total number of girls in
school G, H, I = 700 + 1300 +
800 = 2800
Total number of girls in school
J, K, L, M
= 1100 + 900 + 500 + 400
= 2900
∴ Difference between them =
2900 − 2800
= 100

20. (4) $\frac{\cot 60° - \cot 30°}{1 + \cot 60° \cot 30°}$

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

21. (4) ATQ,
100% ≡ 4000
1% ≡ 40
17% ≡ 680
4000 makes angle 360°

680 makes angle = $\frac{360°}{4000}$ ×680

= 62.2

22. (1) As the angle subtended by a chord AB on the circumference is 90°.
So the chord is the diameter of the circle.
∴ Length of diameter = 2 × 8 cm ⇒ 16 cm

23. (4) We know the centroid divides median in 2 : 1.
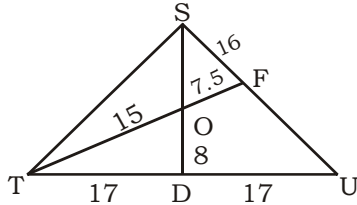
ATQ,
For TF
2 + 1 unit ≡ 22.5

$$1 \text{ unit} \equiv \frac{22.5}{3}$$

1 unit ≡ 7.5
For SE
2 + 1 ≡ 24
1 ≡ 8
∴ For ΔTOE, 8, 15, 17 forms triplet
∴ ΔTOE is right angle triangle.
So, ∠TOE = 90°

24. (3) $(125)^{\frac{1}{6}}$, $(11)^{\frac{1}{3}}$, $(12)^{\frac{1}{6}}$, $(5)^{\frac{1}{4}}$

Multiply the power of each term with LCM of 6, 3, 6, 4.

$$\Rightarrow (125)^{\frac{12}{6}}, (11)^{\frac{12}{3}}, (12)^{\frac{12}{6}}, (5)^{\frac{12}{4}}$$

$$\Rightarrow (125)^2, (11)^2, (12)^2 \ (5)^2$$

∴ Largest is $(125)^{\frac{1}{6}}$

25. (2) $a + \dfrac{1}{a} = 4$

Squaring both sides.

$$a^2 + \frac{1}{a^2} = (4)^2 - 2 = 14$$

Again squaring both sides

$$a^4 + \frac{1}{a^4} = (14)^2 - 2 = 194$$

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

GENERAL AWARENESS

1.(4) Top performers in GHI 2022 – Belarus, Bosnia & Herzegovina, Chile, China and Croatia
Worst Performers in GHI 2022 – Chad, Democratic Republic of Congo, Madagascar, Central African Republic and Yemen

2.(3) EPROM (erasable programmable read-only memory) is memory that does not lose its data when the power supply is cut off.

3.(4) A molecule of an element which has the atomicity 1 or having only one atom in its molecule , is called monoatomic.The noble gases are examples of monatomic gases- Helium, Radon, Neon, Xenon, Argon, Krypton.

4.(2)

5.(2) Mahatma Gandhi returns to India from South Africa on 9 January 1915.
Gandhi returned to India from South Africa in 1915 at the request of Gopal Krishna Gokhale.

6.(1) Whooping cough, also known as pertussis, is a very contagious respiratory illness caused by a type of bacteria.

7.(2)
8.(2)   .
9.(2) TThe asteroid belt is a torus-shaped region in the Solar System, centered on the Sun and roughly spanning the space between the orbits of the planets Jupiter and Mars. It contains a great many solid, irregularly shaped bodies called asteroids or minor planets.

10.(1) All India Financial Institutions are a group of regulatory bodies which help in regulating the economy. The purpose of these special bodies is to cater the needs of specific segments of the economy.
List of AIFIs
Export - Import Bank of India (Exim Bank)
National Bank for Agriculture and Rural Development (NABARD)
Small Industries Development Bank of India (SIDBI)
National Housing Bank (NHB)
National Bank for Financing Infrastructure and Development (NaBFID)

11. (4)
Capital	Currency	
Turkey	Ankara	Lira
Mangolia	Ulaanbaatar	Tugrik
Saudi Arabia	Riyadh	Riyal
Persia	Persepolis	Rial

12.(3) 2023 FIFA U-20 World Cup will be held in Argentina (originally Indonesia).

13.(2) The approximate length of the Great Himalayan range is also known as the central axial range. It is 2,500 km from east to west, and its width varies between 160-400 km from north to south.

14.(4) Motto Celebrating unity through sports

15. (3) Jack Ma - Alibaba (4 April 1999)
Steve Jobs - Apple (1 April 1976)
Jeff Bezos - Amazon (1 April 1976
Elon Musk - Tesla (2003) , space X (14 March 2002)

16.(1) Gondwana, historic region in central India, comprising portions of Madhya Pradesh, Telangana, Andhra Pradesh, and Maharashtra states. It is inhabited by the Gonds, a group of Dravidian-speaking peoples.

17.(3)
18.(4)
19.(3)
20.(1) The northernmost is the Great Himalaya or Himadri. The world's highest peaks are located in this range.
Middle Himalaya or Himachal is located to the south of Himadri.
The Shiwalik is the southernmost range.
The average height of Shiwalik range is 3,000 to 4,000 feet.

21.(2) Article 350-B provides for a Special Officer for Linguistic Minorities
Article 351: Directive For Development of The Hindi Language
Article 348(1)(a) of the Constitution of India states that all proceedings in the Supreme Court and in every High Court, shall be in English language.

22.(4)
23.(3) Umesh Kumar- Vidarbha Hurricane
Kapil Dev - Haryana Hurricane

24.(1) The Madras Forest Act, 1882 disrupted the lives of the tribal people. It barred them from engaging in their traditional agricultural activities like shifting cultivation. The British were finally able to capture him. They tied him to a tree and shot him dead on 7 May 1924.

25.(4) Eid al-Adha or the Feast of Sacrifice is the second and the larger of the two main holidays celebrated in Islam. It honours the willingness of Abraham to sacrifice his son Ishmael as an act of obedience to God's command.
Losar also known as Tibetan New Year, is a festival in Tibetan Buddhism.
These Gurus were responsible for shaping the beliefs of the Sikhs. Their birthdays, known as Gurpurab, are occasions for celebration and prayer among the Sikhs.

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