

**ENGLISH LANGUAGE AND COMPREHENSION**

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

**EXPLANATION:-**

1. (4) Replace 'the universe other objects' with 'other objects in/of the Universe.'  
 5. (1) 'Guild' - is incorrectly spelt here, means-an association of people with similar interests or ursuits  
 7. (1) The Sentence started in the past tense so it will continue in the same Tense.  
 12. (1) Replace 'has' with 'have' Plural Subjects (skull bones) takes a Plural verb (have)

<b>WORD</b>	<b>MEANING IN ENGLISH</b>	<b>MEANING IN HINDI</b>
Bellicose	Demonstrating aggression and willingness to fight.	लड़ाकू
Chafing	Chafing is a skin irritation that happens when your skin rubs together or against clothing	त्वचा जलन (घर्षण से)
Conscientious	Conscientious- (used about people) careful to do something correctly and well.	जमीरवाला
Crumble	To break or make something break into very small pieces.	टुकड़े-टुकड़े हो जाना
Exile	The state of being forced to live outside your own country (especially for political reasons)	निर्वासन, देशनिकाला
Ferocious	Very aggressive and violent	अति आक्रामक और हिंसक
Frightful	Very bad or unpleasant, that makes you afraid	भयंकर, डर पैदा करने वाला
Genre	A particular type or style of literature, art, film or music that you can recognize because of its special characteristics.	शैली
Inimical	Harmful	हानिकारक
Interfere	To enter into or take a part in the concerns of others, Intercede	हस्तक्षेप करना
Jam	To become blocked, wedged, or stuck	जाम
Lethargic	Of, relating to, or characterized by laziness or lack of energy	सुस्त, आलसी
Levity	Behaviour or speech showing a lack of respect for something serious or treating a serious matter with humour	छिछोरापन, हलकापन
Levy	To officially demand and collect money, etc.	कानूनन तसीलना
Mild	Not strong	हल्का
Mollify	To soothe in temper or disposition	शांत करना
Pacific	Peaceful in character or intent.	शांत
Scrupulous	Very careful or paying great attention to detail	अति सावधान या ब्योरों पर अधिक ध्यान देने वाला
Scrutinize	To look at or examine something carefully	जाँचना
Tame	To reduce from a wild to a domestic state	पालतू बनाना
Wager	Something on which bets are laid, Gamble	दांव

**GENERAL INTELLIGENCE & REASONING**

1. (1) 29  
 2. (1)  
 3. (4)  $14 : 85 \Rightarrow 14 \times 6 = 84 + 1 = 85$   
 $20 : 121 \Rightarrow 20 \times 6 = 120 + 1 = 121$   
 Similarly,  
 $11 : ? \Rightarrow 11 \times 6 = 66 + 1 = 67$
4. (4) 
$$\begin{array}{cccc} L & R & E & A \\ +1\downarrow & +1\downarrow & +1\downarrow & +1\downarrow \\ M & S & F & B \\ \text{Similarly,} & & & \\ B & S & F & X \\ +1\downarrow & +1\downarrow & +1\downarrow & +1\downarrow \\ C & T & G & Y \end{array}$$
- $\Rightarrow (24 \times 16) \Rightarrow \frac{384}{2} \Rightarrow 192$   
 $22, 62, 341 \Rightarrow \left(\frac{22}{2}\right) \times 62$   
 $\Rightarrow 11 \times 62 \Rightarrow \frac{682}{2} \Rightarrow 341$   
 Similarly,
5. (3)  $48, 16, 192 \Rightarrow \left(\frac{48}{2}\right) \times 16$

$$84, 78, 1638 \Rightarrow \left(\frac{84}{2}\right) \times 78$$

$$\Rightarrow (42 \times 78) \Rightarrow \frac{3276}{2}$$

$$\Rightarrow 1638$$

6. (4)

7. (2) ROUTE  $\rightarrow 9 + 6 + 3 + 2 + 5$   
 $= 25 \rightarrow 2 + 5 = 7$

SHARE  $\rightarrow 10 + 8 + 1 + 9 + 5$   
 $= 33 \rightarrow 3 + 3 = 6$

Similarly,

TABLE  $\rightarrow 2 + 1 + 2 + 3 + 5$   
 $= 13 \rightarrow 1 + 3 = 4$

8. (4) P I f i r S | P I f i r s | P I f i r  
 S | P I f i r s

9. (1)

10. (3) 812, 879, 947  $\Rightarrow (812 + 947)$

$$= 1759 = \frac{1759 - 1}{2}$$

648, 715, 783  $\Rightarrow (648 + 783)$

$$= 1431 = \frac{1431 - 1}{2} = 715$$

Similarly,

612, 679, 747

$$\Rightarrow \frac{(612 + 747) - 1}{2}$$

$$\Rightarrow 679$$

11. (2)

12. (1)  $D^- + \leftrightarrow E^+ \leftrightarrow F^- G^+$   
 H

E is brother of G.

13. (2)  $13 \odot 62 = 225 \Rightarrow 13 + 62$

$$= 75 \times 3 = 225$$

$4 \odot 38 = 126 \Rightarrow 4 + 38 = 42 \times 3 = 126$

Similarly,

$29 \odot 17 \Rightarrow 29 + 17 = 46 \times 3 = 138$

14. (3) 5. World

2. Asia

1. India

3. Uttar Pradesh

4. Taj Mahal

15. (2)

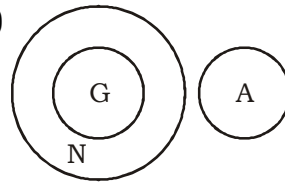
16. (3) C G K      U Y C  
 3 7 11      21 25 3  
 +4 +4      +4 +4

S W A  
 19 23 1  
 +4 +4

But,

22 26 3  
 V Z C  
 +4 +4

17. (4)



18. (4) As a teacher works in school, similarly Scientist works in Laboratory.

19. (3)

20. (4)

21. (3) 89, 148, 207, 266, 325

$$+59 +59 +59 +59$$

22. (2) From equation (i), 2. (2)  $\frac{x^2 - 1}{x} = 8$

We have,

$$24 \div 8 - 2 + 7 \times 6$$

$$= 3 - 2 + 42$$

$$= 43$$

Again from equation (ii), interchanging  $\times$  and  $-$

We have,

$$8 - 6 \times 9 \div 3 + 10$$

$$= 8 - 6 \times 3 + 10$$

$$= 8 - 18 + 10$$

$$= 0$$

23. (1)  $11 - 1333 \Rightarrow (11)3 = 1331 + 2 = 1333$

$16 - 4098 \Rightarrow (16)3 = 4096 + 2 = 4098$

$13 - 2199 \Rightarrow (13)3 = 2197 + 2 = 2199$

But

$14 - 2762 \Rightarrow (14)3 = 2744 + 2 = 2746 \neq 2762$

24. (2)

25. (2) G R M T S  
 -4 -4 -4 -4 -4  
 O P I N C

Similarly,

B A T C H  
 -4 -4 -4 -4 -4  
 D Y P W X

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

### QUANTITATIVE APTITUDE

1. (2)



As length of chord AB is same as radius (OA = OB)

$\therefore \Delta AOB$  is equilateral triangle

$$\therefore \angle AOB = 60^\circ$$

$$(2) \frac{x^2 - 1}{x} = 8$$

$$x - \frac{1}{x} = 8$$

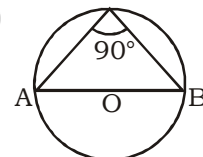
Cubing both sides

$$x^3 - \frac{1}{x^3} - 3\left(x - \frac{1}{x}\right) = 512$$

$$x^3 - \frac{1}{x^3} = 512 + 24$$

$$\frac{x^6 - 1}{x^3} = 536$$

3. (1)



Let, OB = Radius = 10 cm

AB = Diameter = 20 cm

$$\therefore \angle ACB = 90^\circ$$

(As AB is diameter)

4. (3) Efficiency of men is M

Efficiency of boys is B

ATQ,

$$12M \times 8 = 4B \times 40$$

$$3M = B \times M$$

$$M : B = 5 : 3$$

$$\text{Total work } 12 \times 5 \times 8 = 480$$

Number of days required by 9 boys and 3 men.

$$= \frac{480}{(9 \times 3) + (3 \times 5)} = \frac{480}{42} \text{ days}$$

$$\frac{80}{7} \text{ days.}$$

### ANSWER KEY

5. (3)  $6 \cot\theta = 5,$

$$\cot\theta = \frac{5}{6}$$

$$\frac{\cos\theta}{\sin\theta} = \frac{5}{6}$$

$$\cos\theta = 5, \sin\theta = 6$$

$$= 6\cos\theta + \sin\theta \quad (6\cos\theta - 4\sin\theta)$$

$$= (6 \times 5 + 6) [(6 \times 5) - (4 \times 6)]$$

$$= \frac{36}{6} = 6$$

6. (2)

I. Exp. of R in  $Y_1$  and  $Y_2 = 1100$

Exp. of S in  $Y_3$  and  $Y_4$

$$= (700 + 500) = 1200$$

$$\therefore \% \text{ of exp. of R to Exp of S}$$

$$= \frac{1100}{1200} \times 100 = 91.66$$

$$\therefore \text{Statement I is not correct.}$$

II. Total exp. of S =  $1200 + 900 + 700 + 500 + 400 = 3700$

Total exp. of R =  $600 + 500 + 800 + 400 + 1000 = 3300$

$$\% \text{ of Total exp. of S to total exp.}$$

$$\text{of R} = \frac{3700}{3300} \times 100 = 112.12\%$$

$$\therefore \text{Statement II is correct.}$$

7. (3) For 2016

Gain = Rec. - Exp.

$$54 - 51 \Rightarrow 3$$

For 2017,

Gain = Rec. - Exp.

$$= 64 - 60 \Rightarrow 4$$

For 2018

Gain = Rec - Exp.

$$= 80 - 75 \Rightarrow 5$$

For 2019

Gain = Rec. - Exp.

$$= 82 - 80 \Rightarrow 2$$

For 2020

Gain = Rec. - Exp.

$$= 93 - 87 \Rightarrow 6$$

$$\therefore \text{Minimum gain is in 2019}$$

8. (1) Marked price = 210

Selling price = 189

$$\therefore \text{Discount} = (210 - 189) = 21$$

$$\therefore \text{Discount percentage}$$

$$= \frac{21}{210} \times 100 = 10\%$$

9. (3) Ratio of volume = 32 : 9

Ratio of heights = 8 : 9

Let, radi of 2 cylinders are  $r_1,$   
 $r_2$  cm

Volumes of 2 cylinders are

$$\frac{1}{3} \pi r_2^2 \cdot 9$$

$$\text{ATQ, } \frac{\frac{1}{3} \pi r_1^2 \times 8}{\frac{1}{3} \pi r_1^2 \times 9} = \frac{32}{9}$$

$$\frac{r_1^2}{r_2^2} = 4$$

$$r_1 = 2r_2$$

Base area of 2<sup>nd</sup> cylinder

$$= \pi r_2^2 \text{ cm} \Rightarrow \frac{\pi r_1^2}{4} \text{ cm}$$

ATQ,

$$\frac{\pi r_1^2}{4} = 616$$

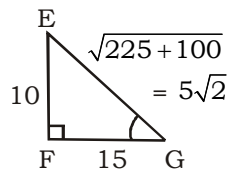
$$r_1^2 = 616 \times 4 \times \frac{7}{22}$$

$$r_1^2 = 28 \times 28$$

$$r_1 = 28$$

Radius 1<sup>st</sup> cylinder is 28 cm

10. (1)



$$\text{Cosec}G = \frac{5\sqrt{13}}{10} = \frac{\sqrt{13}}{2}$$

11. (3) Total cost price =  $30 \times x$

$$= 30x$$

Total selling price =  $8 \times x + (x - 8) \times 45$

$$= 8x + 45x - 360$$

$$= 53x - 360$$

$$\therefore \text{Profit} = 53x - 360 = 30x$$

$$= 23x - 360$$

$$\therefore \text{Profit} = \frac{23x - 360}{30x} \times 100$$

ATQ,

$$108 = \left[ \frac{23x - 360}{30x} \right] \times 100$$

$$300x = 2300x - 36000$$

$$2000x = 36000$$

$$x = 18$$

$$\therefore \text{Ritkika sold } (18 - 8) = 10 \text{ kg}$$

$$\text{of wheat at } 45/\text{kg}$$

12. (4) Speed of car after repairing = 108 km/h

$$\therefore \text{Distance travelled in } 3\text{h} = (108 \times 3) \text{ km} = 324 \text{ km}$$

$$\therefore \text{Time taken by car to travel } (324 \times 5) \text{ km before repairing}$$

$$= \frac{324 \times 5}{72} = 22 \text{ hrs. } 30 \text{ minutes}$$

13. (2) Ratio of income of P and Q = 1 : 2

Ratio of income of Q and R = 3 : 2

$$\therefore \text{Ratio of income of P, Q and R}$$

$$P : Q : R$$

$$1 : 2 : 2$$

$$3 : 3 : 2$$

$$\hline 3 : 6 : 4$$

$$\hline$$

ATQ,

$$\frac{3}{2} - \frac{3}{3} = 4400 \Rightarrow \frac{1}{2} = 4400$$

$$1 = 8800$$

$$\therefore \text{Income of Q} = 8800 \times 6$$

$$= 52800$$

14. (2)  $(2^2 + 1)(2^4 + 1)(2^8 + 1) \dots (2^{128} + 1)$

$$\Rightarrow \frac{(2^2)^{128} - 1}{3} \Rightarrow \frac{2^{256} - 6}{3}$$

15. (3) Let, Pass marks of exam 100%.

ATQ,

$$64 = 80\%$$

$$100\% = 80$$

$$\text{Full marks of exam} = \frac{80}{40} \times 100$$

$$= 200$$

16. (2) Let, side of equilateral triangle = 9 cm

Circumradius of triangle

$$= \frac{9}{\sqrt{3}} \text{ cm}$$

ATQ,  $\frac{9}{\sqrt{3}} = 14$

$$a = 14\sqrt{3}$$

∴ Length of medium

$$= \frac{\sqrt{3}}{2} \times \text{side unit}$$

$$= \frac{\sqrt{3}}{2} \times 14\sqrt{3} \text{ cm} \Rightarrow 21 \text{ cm}$$

17. (3)  $1 - 7 + 2 - 8 + 3 - 9 + 4 - 10 + \dots + 100$  terms.

$$= (1 - 7) + (2 - 8) + (3 - 9) + \dots + (45 - 51).$$

$$= -6 \times 50 = -300$$

18. (2)  $-\sin\theta + \operatorname{cosec}\theta = 6$

$$\operatorname{cosec}\theta - \sin\theta = 6$$

$$\operatorname{cosec}\theta - \frac{1}{\operatorname{cosec}\theta} = 6$$

As we know

$$\left[ \begin{array}{l} a - \frac{1}{a} = k \\ a + \frac{1}{a} = \sqrt{k^2 + 4} \end{array} \right]$$

Now,

$$\sin\theta + \operatorname{cosec}\theta = \sqrt{(6)^2 + 4}$$

$$\operatorname{cosec}\theta + \frac{1}{\operatorname{cosec}\theta} = \sqrt{40}$$

19. (3)  $a^2 + 3a^2 + 3a = 63$

$$a^3 + 3a^2 + 3a + 1 = 64$$

$$(a + 1)^3 = (4)^3$$

$$a + 1 = 4 \Rightarrow a = 3$$

$$\therefore \text{Value of } a^2 + 2a = (3)^2 + 2 \times 3$$

$$= 9 + 6 \Rightarrow 15$$

20. (3) Total income of C and D

$$= 600 + 400 = 1000$$

$$\therefore \text{Average income} = \frac{1000}{2} = 500$$

$$\text{Total saving of C and D} = 1000 - 300 = 700$$

21. (1) Total strength of students

$$\text{In 2022} = 76 + 65 + 48 + 31 = 220$$

$$\text{Total students in science} = 65 + 55 + 83 + 69 + 78 = 350$$

$$\therefore \text{Average of students} = \frac{350}{5}$$

$$= 70$$

$$\therefore \text{Ratio of average of students in science to total students strength} = 70 : 220$$

$$= 7 : 22$$

22. (3) Prime numbers between 100 and 120 is  $\rightarrow 101, 103, 107, 109, 111.$

There are 5 prime number.

23. (1) Average of 16 numbers is 35.

∴ Sum of 16 numbers

$$= 16 \times 35 = 560$$

$$\therefore \text{Sum of mistaken numbers} = 18 + 17 + 24 + 35 = 94$$

$$\therefore \text{New sum} = 560 - 94 = 466$$

$$\therefore \text{New average} = \frac{466}{12} = 38.83$$

24. (3) Let principal be P

Amount after 1 year at 10% per annum compounded yearly is

$$= P \left( 1 + \frac{10}{100} \right)^1 = \frac{11P}{10}$$

Similarly,

Amount after 1 year at 10% per annum compounded half

$$\text{yearly is} = P \left( 1 + \frac{5x}{100} \right)^2$$

As for half yearly

$$1 \text{ year} \equiv 2 \text{ years}$$

ATQ,

$$\frac{11P}{10} = P \left( 1 + \frac{x}{100} \right)^2$$

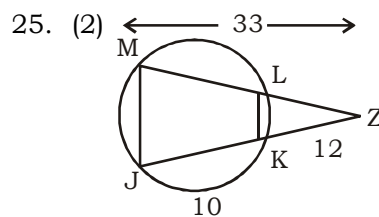
$$\frac{11}{10} = \left( 1 + \frac{x}{100} \right)^2$$

$$\sqrt{\frac{11}{10}} = 1 + \frac{x}{100}$$

$$1.0488 - 1 = \frac{x}{100}$$

$$x = 4.88$$

∴ 4.88% is rate of compound interest.



We know

$$JZ \times KZ = MZ \times LZ$$

$$22 \times 12 = 33 \times LZ$$

$$\frac{22 \times 12}{33} = LZ$$

$$LZ = 8$$

### ANSWER KEY

1. (2) 2. (2) 3. (1) 4. (3) 5. (3)  
6. (2) 7. (3) 8. (1) 9. (3) 10. (1)  
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21. (1) 22. (3) 23. (1) 24. (3) 25. (2)

### GENERAL AWARENESS

1. (3) To undo an action - Ctrl+Z  
2. (2) Pathar Ki Masjid was built by Jhangir's son in 1621. Aurangzeb - Badshahi Mosque, Bibi Ka Maqbara, and Moti Masjid, etc.

3. (2)

4. (1)

5. (2)

6. (1) **Retreating monsoon** season commences with the beginning of the withdrawal of the south-west monsoon [mid-September - November and lasts till early January.

**Advancing Monsoon** brings the maximum rains in India.

7. (3) **Mohsin Hamid** - Exit West, The Reluctant Fundamentalist, The Last White Man, Moth Smoke, The reluctant fundamentalist

**Tarun Vijay** - Kailash Mansarover yatra, Vampanthi Kalush Katha, Saffron Surge

**Khushwant Singh** - Train to Pakistan, Karma, The Company of Women, A history of the Sikhs, Delhi: A Novel, The Sikhs, The end of India

8. (2)

9. (4) The mouth is the beginning of the digestive tract.

**Esophagus** - Located in your throat near your trachea (wind-pipe), the esophagus receives food from your mouth when you swallow.

**Stomach** - The stomach is a hollow organ, or "container," that holds food while it is being mixed with stomach enzymes. These enzymes continue the process of breaking down food into a usable form.

**Small Intestine** - Made up of

three segments — the duodenum, jejunum, and ileum — the small intestine is a 22-foot long muscular tube that breaks down food using enzymes released by the pancreas and bile from the liver.

**Pancreas** - The pancreas secretes digestive enzymes into the duodenum that break down protein, fats and carbohydrates. The pancreas also makes insulin, passing it directly into the bloodstream. Insulin is the chief hormone in your body for metabolizing sugar.

**Gallbladder** - The gallbladder stores and concentrates bile from the liver, and then releases it into the duodenum in the small intestine to help absorb and digest fats.

**Colon** - The colon is responsible for processing waste so that emptying your bowels is easy and convenient. Rectum

**The rectum** is a straight, 8-inch chamber that connects the colon to the anus.

**The anus** is the last part of the digestive tract.

- 10.(3) The **tributaries of the Chambal** include Shipra, Choti Kalisindh, Sivanna, Retam, Ansar, Kalisindh, Banas, Parbati, Seep, Kuwari, Kuno, Alnia, Mej, Chakan, Parwati, Chamla, Gambhir, Lakhunder, Khan, Bangeri, Kedel and Teelar.

The Tawa is the Narmada's largest tributary.

Tributaries of the Godavari river are the Pravara, the Purna, the Manjra, the Penganga, the Wardha, the Wainganga the Pranhita (combined flow of Wainganga, Penganga, Wardha), the Indravati, the Maner and the Sabri.

- 11.(2) Andaman and Nicobar Islands - 1 November 1956  
Chandigarh - 1 November 1966  
Dadra and Nagar Haveli and Daman and Diu - 26 January 2020

- Puducherry - 16 August 1962  
12.(3) Ranjit Singh popularly known as Sher-e-Punjab or "Lion of Punjab", was the first Maharaja of the Sikh Empire.

Guru Gobind Singh was the last of the ten Gurus, the one who transformed the Sikh faith. In 1699 he created the Khalsa (Pure).

- 13.(4) A netball team consists of 7 players.

14.(3) 15.(3)

16.(4) 17.(4)

18.(3)

- 19.(1) Article 12 - Definition of states  
Article 51 (A): Fundamental duties

395 has been repealed from the Indian constitution.

- 20.(3) 2024 Summer Olympic Games - Los Angeles.

2026 Winter Olympic Games - Milan and Cortina d'Ampezzo

- 21.(4) **Amir Khusro** (1253-1323) was a great poet, musician and follower of Sheikh Nizamuddin Auliya.

He is frequently credited with creating the Haliq Bari, a poetry vocabulary that includes phrases from Arabic, Persian, and Hindavi. Khusrau has been referred to be the "founder of Urdu literature," the "voice of India," or the "Parrot of India" (Tuti-e-Hind). Khusrau is credited as being the "founder of qawwali".

**Tansen** was the title given to him by Raja Vikramjit of Gwalior.

Akbar gave the title of Kanthabharan Vanivilas to Tansen. He was the court poet of Raja Ramchandra Singh of Rewa and also Akbar. He specialized in the Dhrupad style of singing. He invented the night raga Darbari Kanhra, morning raga Mian Ki Todi, mid-day raga, Mian ki Sarang, seasonal raga Mian ki Malhar. He composed many Dhrupads on Hindu gods and goddesses like Ganesha, Shiva, Parvati and Rama.

**Kalidas** written Meghaduta,

Raghuvaṛsa, Kumarasambhava, The loom of time, The Story Of Shakuntala, The birth of Kumārā

- 22.(1) Best player (s) - Vicky López  
Best goalkeeper - Sofia Fuente  
Fair play award - Japan

- 23.(3) 1. Rabindranath Tagore Literature 1913

2. CV Raman Physics 1930

3. Har Gobind Khurana Medicine 1968

4. Mother Teresa Peace 1979

5. Subrahmanyam Chandra sekhar Physics 1983

6. Amartya Sen Economics 1998

7. Venkatraman Ramakrishnan Chemistry 2009

8. Kailash Satyarthi Peace 2014

9. Abhijit Banerjee Economics 2019

- 24.(2) They lack a nuclear membrane. Mitochondria, Golgi bodies, chloroplast, and lysosomes are absent.

The genetic material is present on a single chromosome.

The histone proteins, the important constituents of eukaryotic chromosomes, are lacking in them.

The cell wall is made up of carbohydrates and amino acids.

The plasma membrane acts as the mitochondrial membrane carrying respiratory enzymes.

They divide asexually by binary fission. The sexual mode of reproduction involves conjugation.

- 25.(4) Metallurgical coal, a type of bituminous coal, is specially used for smelting iron in blast furnaces.

### ANSWER KEY

1. (3) 2. (2) 3. (2) 4. (1) 5. (2)  
6. (1) 7. (3) 8. (2) 9. (4) 10. (3)  
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