QUANTITATIVE APTITUDE

1. (3) Given,
$t_1 = 3$ years
$r = 14\%$
Diff. of interest = 4200
$t_2 = 5$
A.T.Q,
$\frac{P\times14\times5}{100} - \frac{P\times14\times3}{100} = 4200$
$\Rightarrow \frac{70P-42P}{100} = 4200$
$\Rightarrow P = 15{,}000$
so, the sum is 15000

2. (2) Given
$Men(M_1) \rightarrow 450$
$Day(D_1) \rightarrow 20$
$M_2 \rightarrow ?$
$D_2 \rightarrow 30$
A.T.Q,
$M_1\times D_1 = M_2\times D_2$
$450\times20 = M_2\times30$
$M_2 = 300$

3. (1) Given
$a+b = 11$,
$ab = 35$
squaring both side
$(a+b)^2 = 11^2$
$\Rightarrow a^2+b^2+2ab = 121$
$\Rightarrow a^2+b^2 = 121-70 = 51$
squaring both side
$\Rightarrow (a^2+b^2)^2 = (51)^2$
$\Rightarrow a^4+b^4+2(ab)^2 = 2601$
$\Rightarrow a^4+b^4+2\times1225 = 2601$
$\Rightarrow a^4+b^4 = 151$

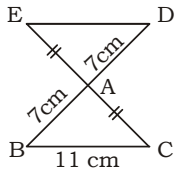
4. (3) Let, two numbers are = 6x, 5x
HCF of numbers = 3
So, the value of x = 3
Then, the two numbers are = 18, 15.
Then, LCM of 18, 15 is $3\times6\times5 = 90$

5. (4) Formula $\rightarrow a\left(1-\frac{b}{a}\right)^n$
$a \rightarrow$ Initial quantity
$b \rightarrow$ replacing quantity
$n \rightarrow$ replacing time
$25\left(1-\frac{5}{25}\right)^3$
$= 25\times\frac{4}{5}\times\frac{4}{5}\times\frac{4}{5} = \frac{64}{5} = 12.8$ lit

6. (4) Given
$x + y = 36$
Let, $x = 27$, $y = 9$
Putting the value of x, y in equation $(x-27)^3 + (y-9)^3$
$= (27-27)^3+(9-9)^3 = 0$

7. (1) Given
$100\% \rightarrow 2000$
So, $1\% \rightarrow 20$
Required average Diff.
$= \left[\frac{(P+Q+R+S)}{4}\times20 - \frac{(T+U+V+W)}{4}\times20\right]$
$= \frac{65\times20}{4} - \frac{35\times20}{4}$
$= 65\times5 - 35\times5 = 150$

8. (3) Given
AB = AD = 7cm,
AC = AE,
BC = 11 cm
then ED = ?



$\Delta ABC \cong \Delta ADE$
$[\because AC = AC, AB = AD]$
Then, $\frac{AB}{BC} = \frac{AD}{DE}$
or, $\frac{7}{11} = \frac{7}{ED}$
or, ED = 11

9. (3) Given
$y + \frac{1}{y} = 3$
We know that When, $x + \frac{1}{x} = k$
then, $x^3 + \frac{1}{x^3} = k^3 - 3k$
So, $y^3 + \frac{1}{y^3} = 3^3 - 3\times3$
$= 27-9 = 18$
then $y^3 + \frac{1}{y^3} + 2 = 18+2 = 20$

10. (3) $\frac{2\tan60°}{1+\tan^2 60°}$
$= \frac{2\times\sqrt{3}}{1+\left(\sqrt{3}\right)^2} = \frac{2\sqrt{3}}{4} = \frac{\sqrt{3}}{2} =$ sin60°
$[\because \sin60° = \frac{\sqrt{3}}{2}]$

11. (1) Total Expenditure on Salary, taxes and infrastructure is (20 + 10 +20) = 50 unit.
Interest on Loans = 17.5 unit
Given,
17.5 unit ≡ 3.15 Cr.
1 unit ≡ 0.18 Cr.
50 unit = 0.18 × 50 = 9.00 Cr.

12. (3) tan240°
We know, [tan(180°+θ) = tanθ]
= tan(180°+60°) = tan60° = $\sqrt{3}$

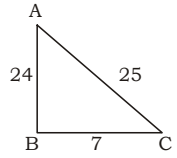
13. (1) (I)Income of C_1 in year P is 750
Income of C_2 in year Q is 250
Required percentage =
$\frac{750}{250}\times100 = 300\%$
So, (I) is not correct.
(ii) the average income of C_1 and C_2 in year T is 400.
$\frac{530+270}{2} = 400$ is correct

14. (2) Successive discount $\rightarrow x+y-\frac{xy}{100}$
$= 15+12-\frac{15\times12}{100}$
$= 27-\frac{180}{100} = 27-1.8 = 25.2\%$

15. (2) Volume of sphere $= \frac{4}{3}\pi r^3$
volume of wire = $\pi r^2 h$ (h = length of wire)
A.T.Q,
$\frac{4}{3}\pi\times\left(\frac{18}{2}\right)^3 = \pi\times\left(\frac{6}{2}\right)^2\times h$
$\Rightarrow \frac{4}{3}\times9\times9\times9 = 3\times3\times h \Rightarrow h = 108$
[Wrong unit is given by ssc]

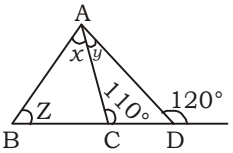
16. (4) Volume of metallic sphere $= \frac{4}{3}\pi r^3$
volume of Cone = $\frac{1}{3}\pi r^3 h$
A.T.Q,
$\frac{4}{3}\times\pi\times13\times13\times13 = \frac{1}{3}\pi\times\frac{13}{2}\times\frac{13}{2}\times h$
$\Rightarrow$ h = 208 cm

17. (4) Given
$\tan\theta+\sec\theta = 7$
than,
$\sec\theta + \tan\theta = 7$ ....(i)
$\sec\theta - \tan\theta = \frac{1}{7}$ ....(ii)
adding (i) and (ii)
$2\sec\theta = 7+\frac{1}{7}$
$\sec\theta = \frac{25}{7}$



Value of $5\sin\theta \Rightarrow 5\times\frac{24}{25} = \frac{24}{5}$

18. (3) Given



In ΔABC,
Interior angle $\angle BAC+\angle ABC$ = Exterior angle $\angle ACD$
$x+z = 110°$
Similarly,
$y+110° = 120°$
$y = 10°$
Value of $\rightarrow x+y+z \Rightarrow 110°+10° = 120$

19. (4) Let, Expenditure is $500x$, saving is $100x$
then, Income is $600x$.
If the income increased by 10% then income will be $660x$ and expenditure increased by 20% then, Expenditure will be $600x$
So, Saving will be = $660x$ - $600x = 60x$

$\text{Saving decrease} = \frac{40x}{100x}\times 100$
$= 40\%$

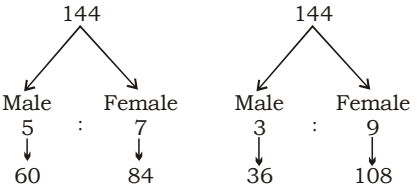
20. (4) $(27^{27} + 27) \div 28$

$\frac{27^{27}+27}{28} = \frac{(27)^{27}+27}{28}$

$\Rightarrow \frac{(-1)^{27}+(-1)}{28}$

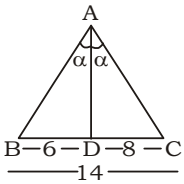
Remainder = (28 - 1 -1) = 26

21. (1) Total number of students in B and D are 400 and 800 respectively.
Opted biology →
400×36% 800×18%



Ratio of female who opted biology in school B and D
= 84 : 108 = 7 : 9

22. (1) In ΔABC
AD → Bisector of angle



If AD is Bisector of angle $\angle BAC$
then, $\frac{AB}{AC} = \frac{BD}{DC}$
$\frac{AB}{AC} = \frac{6}{8} = \frac{3}{4}$

23. (1)

	A	:	B	:	C
Time →	20	:	5	:	4
Efficiency→	1	:	4	:	5

Total Work = 4(1 + 4 + 5)
= 4 × 10 = 40
So, B alone can do the work
$= \frac{40}{4}$ = 10 days

24. (4) Let, P $\xrightarrow{120m}$ Q
Speed of upstream → $(x-y)$km/h
Speed of down stream → $(x+y)$km/h
Distance against current
$= (x-y)\times\frac{6}{60}$

$\text{Distance along current} = (x+y)\times\frac{6}{60}$

25. (3) $15\% - \frac{3}{20}$, $12\% - \frac{3}{25}$

		Initial	:	Final
Kapil : Sachin →		20	:	23
Suchin : Rohit →		25	:	28
Kapil : Rohit →		20×25	:	23×18
		= 125	:	161

ATQ, 161 unit = 322
1 unit = 2
125 unit = 125 × 2 = 250
So, the cost price of the mobile for kapil = 250.

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

GENERAL AWARENESS

1. (4) The Amur Railways - last section of Trans-Siberian Railway
Trans-Baikal Railway - Zabaykalsky Krai and Amur Oblast. It is also the part of Trans-Siberian Railways.
Trans - Siberian Railways is the longest Railways.
2. (4) Governor of Chhattisgarh - Anushiya Vikey
Lok Sabha Seats - 11
Rajya Sabha Seats - 5
3. (4) Union Minister of Power - R.K Singh
4. (4) Mehrgarh is site situated on the Kacchi Plain of Balochistan in Pakistan. Gufkral is a site inhabited by Potters who utilize the caves, located at Banmir, J & K.
5. (1) Goa Tarangmel, Koli Dekhni, Fugdi, Shigmo. Ghode, Modni, Samayi nrutya, Jagar Ranmale, Gonph, Tonnya mell.
6. (2)
7. (4) Chief Minister of Andhra Pradesh - Y.S. Jagan Mohan Reddy
Governor of Andhra Pradesh -Biswa Bhusan Harichandan
8. (4) Mahalanobis was born on 29 June 1893 in Calcutta and he is father of Indian Statistics.
9. (1)
10. (1) "All India Muslim League" was on 30 December 1906 at Dacca. It was dissolved on 15 Dec, 1947. In 1940 Muslim League advocated the sperate Nation.
11. (4) Right to equality - Art.14-18
Right against exploitation-Art.23-24
Right to freedom of religion-Art.25-28
Right to vote - Art. 326
12. (4)

River	Origin
Mahanadi	Dhamtari (Chhattisgarh)
Tapi	Satpura Range
Ravi	Kangra (Himachal Pradesh)

13. (4) Bismillah Khan - Shehnai
Allaudin Khan - Sarod

14. (4) **Column-A (Vitamin) — Alternative Name**
Vitamin A - Retinol
Vitamin B_{12} - Cobalamin
Vitamin C - Ascorbic Acid
Vitamin D - Ergocalciferol

15. (4) IBA Youth Boxing Championship ages 17 or 18 in 10 weight classes. The Youth World Games was first held in 1979 in Yokohama, Japan. IBA Junior Boxing Championship ages 15 or 16. It was first held in 2001, Baku Azerbaijan.

16. (2) The Major Himalayan rivers are the Indus, Jhelum, Chenab, Beas, Ravi, Saraswati, Sutlaj, Ganga

17. (4) Vijayalaya belonged to the Chola family of Uraipur. He defeated Muttaraiyau, the ruler of the Kaveri Delta and built the town of Thanjavur and temple for the Goddess Vishumbhasudini.

18. (1) The first complete census took place in India is the year 1881 AD under Rippon.
First census was done in India under the rule of Mayo in 1871.

19. (3) The central banks carry out the nation's monetary policy and control its money supply often mandated with maintaining low inflation & steady GDP growth.

20. (1) The 'Rann Utsav" is organizing in Gujarat (Ran of Kutch utsav) from 26th October to 2014 February 2023

State	Chief Minister Governor
Gujarat	Bhupendra
Acharya	Bhai Patel Devvrat
Punjab	Bhagwat Maan Banvari Lal Purohit
Maharashtra	Eknath Sinde Bhagat Singh Koshyari

21. (1) The Kerala Bird Atlas (KBA) the first-of-its Kind state-level bird atlas in India created solid baseline data about the distribution and abundance of various bird species across al major habitats giving an impetus for futuristic studies.

22. (1) Inertia is a property of matter that causes it to resist change in velocity. According to newton's first law of motion. Greater the mass, greater the inertia.

23. (1) Anantraj Sagar tank was built by Vijaya Nagara rulers with a 1.37km long earthen dam across the Maldevi River in Andhra Pradesh.

24. (2) Geeta Kapoor is a Choreographer, who Choreographed song of Fiza, Heyy Baby, Thoda Pyar Thoda Magic, Aladin, Sheela ki Jawani, etc. She also Choreographed the opening ceremony of Pepsi IPL 2013.
Vaibhavi Merchant won National Award for Best Choreography for the "Song Dholi Taaro Dhol Baaje" from Hum Dil De Chuke Sanam (1999).
Farah Khan received Film Fair Award for Best Director for Main Hoon Na (2004), Om Shanti Om (2007), Tees Mar Khan (2010) and Happy New Year (2014).

25. (3) Maltose ($C_{12}H_{22}O_{11}$) - a product of the breakdown of starch during digestion.
Starch $(C_6H_{10}O_5)_n$ - Primary source of energy
Glucose ($C_6H_{12}O_6$)- Glucose is a simple sugar.

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

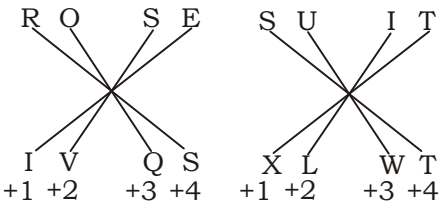
GENERAL INTELLIGENCE & REASONING

1. (1) The logic is
$1331 \rightarrow (11)^3$;
$2197 \rightarrow (13)^3$
$4913 \rightarrow (17)^3$;
$6859 \rightarrow (19)^3$

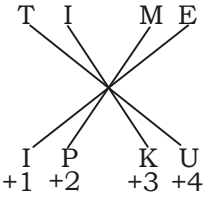
2. (4) From fig (i) and fig (iii)
$1 < \begin{matrix}5 & 6\\ 2 & 4\end{matrix}$
$1 \leftrightarrow 3$
$5 \leftrightarrow 2$
$6 \leftrightarrow 4$

3. (4) The pattern is
CRUST $\xrightarrow{\text{reverse}}$ TSURC $\xrightarrow{\text{Place value}}$ 201921183
BLAME $\xrightarrow{\text{reverse}}$ EMALB $\xrightarrow{\text{Place value}}$ 5131122
Similarly,
PLASTIC $\xrightarrow{\text{reverse}}$ CITSALP $\xrightarrow{\text{Place value}}$ 39201911216

4. (1) The pattern is



Similarly,

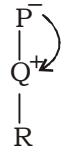


5. (4) The right answer is option (4)

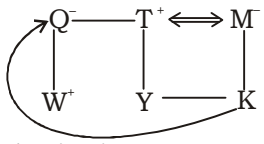
6. (3) FDB $\rightarrow$ F $\xrightarrow{-2}$ D $\xrightarrow{-2}$ B
ZXV $\rightarrow$ Z $\xrightarrow{-2}$ X $\xrightarrow{-2}$ V
JIP $\rightarrow$ J $\xrightarrow{-1}$ I $\xrightarrow{-7}$ P – odd
LJH $\rightarrow$ L $\xrightarrow{-2}$ J $\xrightarrow{-2}$ H

7. (2) Given (9, 81, 729) (14, 196, 2744)
the logic is
9^2 and $9^3 \rightarrow$ 81 and 729
14^2 and $14^3 \rightarrow$ 196 and 2744
17^2 and $17^3 \rightarrow$ 289 and 4913

8. (4) By hit and trial method
P – Q + R,



9. (4) W @ Q # T & Y @ M % K



Father's sister
∴ Q is K's father's sister.

10. (4) Right option is option (4)

11. (2) By hit and trial method
$6 \div 2 \times 8 + 3 - 1 = 17$
(interchanging 3 and 8)
$6 \div 2 \times 3 + 8 - 1 = 17$
$3 \times 3 + 7 = 17$
16 = 17 (in correct)

12. (1) The logic is

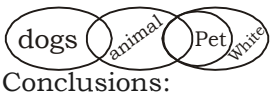
Similarly,

I N T E G R I T Y

N T I E G I R Y T

13. (1) 1st January 2033
1 + 1 + 8 + 5 – 1 = 14
= Remainder = 0
So, Day → Saturday

14. (3) Earth is a planet, similarly moon is a satellite.

15. (3) 

Conclusions:
i Some dogs are white- ✗
ii Some animals are white- ✔
iii Some animals are dogs- ✔

16. (3) By hit and trail method
18 + 2 × 6 ÷ 3 – 7 = 50
18 ÷ 2 × 6 + 3 – 7 = 50
54 – 4 = 50 ⇒ 50 = 50

17. (4) The logic is

A	B	C	D
+1	+2	+3	+0
B	D	F	D
+1	+2	+3	+0
C	F	I	D
+1	+2	+3	+0
D	**H**	**L**	**D**
+1	+2	+3	+0
E	J	O	D

18. (4) Right answer is option (4)

19. (3) Given the odd group of numbers
92 – 72 – 52 → 92 $\xrightarrow{-20}$ 72 $\xrightarrow{-20}$ 52
76 – 56 – 36 → 76 $\xrightarrow{-20}$ 56 $\xrightarrow{-20}$ 36
98 – 78 – 56 → 98 $\xrightarrow{-20}$ 78 $\xrightarrow{-20}$ 56—odd
88 – 68 – 48 → 88 $\xrightarrow{-20}$ 68 $\xrightarrow{-20}$ 48

20 (1) By hit and trail method
$(6)^3 \div 12 + \left[\left(\sqrt{81}\right) \times 4\right] - (28 \div 2) + 24 = 43$
Interchanging 12 and 24
$(6)^3 \div 24 + \left[\left(\sqrt{81} \times 4\right)\right] - (28 \div 2) + 12 = 43$
$\frac{6 \times 36}{24} + 36 - 14 + 12 = 43$
9 + 36 – 2 = 43 43 = 43

21. (2) The pattern is
37 : 100 → 37 × 3 –11 = 100
24 : 61 → 24 × 3 – 11 = 61
29 : 76 → 29 × 3 – 11 = 76

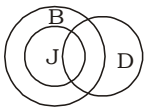
22. (3) Given, (23, 14, 9) (37, 19, 18) the pattern is
23 = 14 + 9 37 = 19 + 18
Similarly, 125 = 25 + 100

23. (3) Right answer is option (3)

24. (2) The pattern is

F	O	X
+2	+2	+0
H	**Q**	**X**
+2	+2	+0
J	S	X
+2	+2	+0
L	U	X
+2	+2	+0
N	W	X

25. (2) Possible venn diagram is



Neither conclusion follows

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

ENGLISH LANGUAGE AND COMPREHENSION

7. (3) "Yesterday is" an appropriate term as the action occurred in past. (SSC gave the answer as (3) although (1) is also correct.

15. (3) Trafficking is incorrectly spelt as traffickng.
It means the movement of an illegal items like drugs, arms etc.
Sometimes human trafficking also happen. It means an unlawful act of transporting or coercing people in order to benefit from their work or service, typically in the form of forced labour or sexual exploitation.

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

Words	Meaning in English	Meaning in Hindi
Casual	i) Coming without regularity; occasional or incidental. ii) relaxed and not worried -without showing great effort or interest iii) Casual wear (Used about clothes),- you generally wear when you are with friends or colleagues. *Ant. Formal - official, Being in accord with established forms.* *Formal wear - your official dress for the office work.*	आकस्मिक, अचानक से होना तनावमुक्त और अचिंतित पहनावा (अनौपचारिक)
Conceit	ego, pride, arrogance *Ant. modesty.*	दंभ, अभिमान
Concealment	The practice of keeping secrets, the condition of being hidden or concealed. (Antonyms -Reveal).	छिपाव
Fertile	capable of growing abundant crops; productive. *Syn. fecund* *Ant. barren.*	उपजाऊ (जमीन या मिट्टी)
Transient	lasting or continuing for a short period of time. *Syn. Temporary, ephemeral, evanescent*	कुछ अवधि तक जारी रहने वाला; क्षणिक, क्षणभंगुर, अस्थायी
Transform	To change greatly the appearance or form of.	बदल देना
Tyrannical	oppressive or authoritarian.	दमनकारी, निरंकुश, अत्याचारपूर्ण