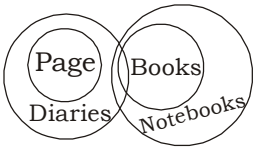
SSC CGL 2025 | SPECIAL MOCK TEST – 06 : SOLUTIONS

A-GENERAL INTELLIGENCE & REASONING

1. (c)



2. (c) 'B' and 'R' Positions remains unchanged.

3. (b) $\overset{-}{4}$ Mother $\overset{+}{3}$ Father $\overset{+}{2}$ Father 1 $\overset{+}{\text{Brother}}$ 5

Father's mother

4. (d)

5. (d) W I S K
↕ ↕ ↕ ↕
D R H P
(↔ = opposite)

L E N T
↕ ↕ ↕ ↕
O V M G

Similarly,

B A N G
↕ ↕ ↕ ↕
Y Z M T

6. (a) 18 – 36 – 72 – 107
⇒ 18 × 2 = 36 (2nd terms)
⇒ 36 × 2 = 72 (3rd terms)
⇒ 72 + 35 = 107 (4th terms)
15 – 30 – 60 – 95
⇒ 15 × 2 = 30 (2nd terms)
⇒ 30 × 2 = 60 (3rd terms)
⇒ 60 + 35 = 95 (4th terms)
Similarly,
22 – 44 – 88 – 123
⇒ 22 × 2 = 44 (2nd term)
⇒ 44 × 2 = 88 (3rd term)
⇒ 88 + 35 = 123 (4th term)

7. (d) 25, 30, 40, 55, 75, **100**

+5 +10 +15 +20 +25

+5 +5 +5 +5

8. (a) Alphabets → ENTOMB
Alphabetical order → **BEMNOT**

9. (d)

10. (d)

11. (c)

12. (c) (213, 157)
⇒ 157 + 56 = 213 (1st number)
(185, 129)
⇒ 129 + 56 = 185 (1st number)
Similarly,
(164, 108)
⇒ 108 + 56 = 164 **(1st number)**

13. (b) 540 – 188 – 128
⇒ (188 – 128) × 9
⇒ 60 × 9 = 540 **(1st term)**
72 – 284 –266
⇒ (284 – 266) × 9
⇒ 18 × 9 = 162 ≠ **(1st term)**
81 – 101 – 92
⇒ (101 – 92) × 9
⇒ 9 × 9 = 81 **(1st term)**
90 – 22 – 12
⇒ (22 – 12) × 9
⇒ 10 × 9 = 90 **(1st term)**

14. (a)

I	M	H	P
+4 ↓	+3 ↓	+2 ↓	+1 ↓
M	P	J	Q
+4 ↓	+3 ↓	+2 ↓	+1 ↓
Q	S	L	R
+4 ↓	+3 ↓	+2 ↓	+1 ↓
U	V	N	S
+4 ↓	+3 ↓	+2 ↓	+1 ↓
Y	**Y**	**P**	**T**

15. (a)

F	A	C	E	D
+1 ↓	−1 ↓	+1 ↓	−1 ↓	+1 ↓
G	Z	D	D	E

V	A	C	A	Y
+1 ↓	−1 ↓	+1 ↓	−1 ↓	+1 ↓
W	Z	D	Z	Z

Similarly,

L	A	B	O	R
+1 ↓	−1 ↓	+1 ↓	−1 ↓	+1 ↓
M	Z	C	N	S

16. (b) 247 ÷ 13 + 16 × 3 – 148 = 119
Option 'b' used
⇒ 247 ÷ 13 – 16 × 3 + 148 = 119
⇒ 19 – 48 + 148 = 119
⇒ 167 – 48 = 119
⇒ 119 = 119 (L.H.S = R.H.S)

17. (c)

18. (a)

19. (a)

20. (d)

F	I	V	E
6	15	22	18
↓×2	↓×2	↓×2	↓×2
12	30	42	36

F	O	U	R
6	15	21	18
↓×2	↓×2	↓×2	↓×2
12	30	42	36

Similarly,

T	H	R	E	E
20	8	18	5	5
↓×2	↓×2	↓×2	↓×2	↓×2
40	16	36	10	10

21. (a)

22. (a) Y C G
(+4, +4)
I M Q
(+4, +4)
S V Z **(Odd)**
(+3, +4)

C G K
(+4, +4)
M Q U
(+4, +4)

23. (a) J H P
(−2, −4)
F D Z
(−2, −4)
A Y U
(−2, −4)

But,
K J E **(Odd)**
(−1, −5)

24. (b) 342 × 18 + 79 – 45 ÷ 3
'+' and '–' are interchanged and '×' and '÷' are interchanged.
⇒ 342 ÷ 18 – 79 + 45 × 3
⇒ 19 – 79 + 135
⇒ 154 – 79 ⇒ 75

25. (c) $\frac{24}{7} = \frac{12}{7}$

$\Rightarrow \frac{24}{7} \div 2 = \frac{12}{7}$

$\Rightarrow \frac{12}{7} = \frac{12}{7}$ (L.H.S = R.H.S)

$\frac{11}{15} = \frac{11}{30}$

$\Rightarrow \frac{11}{15} \div 2 = \frac{11}{30}$

$\frac{11}{30} = \frac{11}{30}$ (L.H.S = R.H.S)

Similarly,

$\frac{9}{13} = x$

$\frac{9}{13} \div 2 = x$

$x = \frac{9}{26}$

26. (b) After Guru Gobind Singh's death, Banda Bahadur led the Sikhs in a revolt against the Mughal Empire, aiming to establish a Sikh state./गुरु गोबिंद सिंह की मृत्यु के बाद, बंदा बहादुर ने सिखों का नेतृत्व करते हुए मुगल साम्राज्य के खिलाफ विद्रोह किया, जिसका उद्देश्य सिख राज्य की स्थापना करना था।

27. (c) Arikamedu, located in Puducherry , was an ancient port town that traded with the Romans and is known for its archaeological site./पुडुचेरी में स्थित अरिकमेडु एक प्राचीन बंदरगाह शहर था जो रोमनों के साथ व्यापार करता था और अपने पुरातात्विक स्थल के लिए जाना जाता है।

28. (a) Gopal Krishna Gokhale founded the Servants of India Society in 1905 to promote social reforms and serve the country./गोपाल कृष्ण गोखले ने सामाजिक सुधारों को बढ़ावा देने और देश की सेवा करने के लिए 1905 में सर्वेंट्स ऑफ इंडिया सोसाइटी की स्थापना की।

29. (c) Article 14 of the Indian Constitution guarantees the Right to Equality, ensuring that all citizens are treated equally before the law./भारतीय संविधान का अनुच्छेद 14 समानता के अधिकार की गारंटी देता है, यह सुनिश्चित करता है कि कानून के समक्ष सभी नागरिकों के साथ समान व्यवहार किया जाए।

30. (c) According to the Constitution of India, a person must be a citizen of India, at least 35 years old, and eligible for election as a member of the Lok Sabha will be eligible to contest for the presidency./ भारत के संविधान के अनुसार, एक व्यक्ति को भारत का नागरिक होना चाहिए, कम से कम 35 वर्ष का होना चाहिए, और लोकसभा के सदस्य के रूप में चुनाव के लिए पात्र होना चाहिए, वह राष्ट्रपति पद के लिए चुनाव लड़ने के लिए पात्र होगा।

31. (c) The hypothalamus, located in the brain, is responsible for regulating body temperature, hunger, thirst, and other essential bodily functions./मस्तिष्क में स्थित हाइपोथैलेमस शरीर के तापमान, भूख, प्यास और अन्य आवश्यक शारीरिक कार्यों को विनियमित करने के लिए जिम्मेदार है

32. (c) Vitamin K is vital for the coagulation (clotting) of blood and is necessary to prevent excessive bleeding./विटामिन K रक्त के जमने (थक्के जमने) के लिए महत्वपूर्ण है और अत्याधिक रक्तस्राव को रोकने के लिए आवश्यक है।

33. (c) The SI unit of electrical resistance is the "Ohm" (symbol: Ω), named after the German physicist Georg Simon Ohm./विद्युत प्रतिरोध की इकाई 'ओम' (प्रतीक : Ω) है, जिसका नाम जर्मन भौतिक विज्ञानी जॉर्ज साइमन ओम के नाम पर रखा गया है।

34. (b) Refraction is the bending of light as it passes from one medium to another with a different density, such as air to water or glass./अपवर्तन प्रकाश का झुकना है क्योंकि यह एक माध्यम से दूसरे माध्यम में अलग-अलग घनत्व के साथ गुजरता है, जैसे हवा से पानी या कांच में।

35. (c) Ernest Rutherford is known as the father of nuclear physics due to his ground breaking work on the structure of the atom and the discovery of the nucleus./अर्नेस्ट रदरफोर्ड को परमाणु की संरचना और नाभिक की खोज पर उनके ग्राउंड ब्रेकिंग कार्य के कारण परमाणु भौतिकी के पिता के रूप में जाना जाता है।

36. (a) Nitrogen is called the "King of Chemicals" because it is essential for the production of ammonia, which is used in fertilizers./नाइट्रोजन को "रसायनों का राजा" कहा जाता है क्योंकि यह अमोनिया के उत्पादन के लिए आवश्यक है, जिसका उपयोग उर्वरकों में किया जाता है।

37. (c) The Brihadeswara Temple in Thanjavur is an example of Dravidian architecture, known for its grand size and intricate designs./तंजावुर में बृहदेश्वर मंदिर द्रविड़ वास्तुकला का एक उदाहरण है, जो अपने भव्य आकार और जटिल डिजाइनों के लिए जाना जाता है।

38. (b) Bharatanatyam is a classical Indian dance form that originated in the temples of Tamil Nadu and is known for its intricate footwork and expressive gestures./भरतनाट्यम एक शास्त्रीय भारतीय नृत्य शैली है जिसकी उत्पत्ति तमिलनाडु के मंदिरों में हुई थी और यह अपने जटिल पदचिह्नों और भावपूर्ण हाव-भाव के लिए जानी जाती है।

39. (a) Rabindranath Tagore was the first Indian to win a Nobel Prize, awarded the Nobel Prize for Literature in 1913 for his work "Gitanjali."/रवींद्रनाथ टैगोर नोबेल पुरस्कार जीतने वाले पहले भारतीय थे, उन्हें 1913 में उनकी कृति "गीतांजलि" के लिए साहित्य का नोबेल पुरस्कार दिया गया था।

40. (b) Kanchenjunga, located in the Himalayas on the India-Nepal border, is the highest peak in India and the third-highest in the world./भारत-नेपाल सीमा पर हिमालय में स्थित कंचनजंगा भारत की सबसे ऊँची चोटी और दुनिया की तीसरी सबसे ऊँची चोटी है।

41. (b) The Nile River, flowing through north eastern Africa, is considered the longest river in the world, with a length of approximately 6,650 kilometres./उत्तर पूर्वी अफ्रीका से होकर बहने वाली नील नदी को दुनिया की सबसे लंबी नदी माना जाता है, जिसकी लंबाई लगभग 6,650 किलोमीटर है।

42. (a) The Sahara Desert, located in northern Africa, is the largest hot desert in the world, covering an area of around 9.2 million square kilo meters./उत्तरी अफ्रीका में स्थित सहारा रेगिस्तान दुनिया का सबसे बड़ा गर्म रेगिस्तान है, जो लगभग 9.2 मिलियन वर्ग किलोमीटर क्षेत्र में फैला हुआ है।

43. (a) The Western Ghats are older than the Himalayas and are a hotspot of biodiversity. They extend from the south of Tapti River in the north(not from it) to Kanyakumari in the south./पश्चिमी घाट हिमालय से भी पुराने हैं और जैव विविधता का केंद्र हैं। वे उत्तर में ताप्ती नदी के दक्षिण से (उससे नहीं) दक्षिण में कन्याकुमारी तक फैले हुए हैं।

44. (a) The Ganga River Basin is the largest river basin in India and falls in the Bay of Bengal. However, it flows through more than three Indian states./गंगा नदी बेसिन भारत का सबसे बड़ा नदी बेसिन है और बंगाल की खाड़ी में गिरती है। हालाँकि, यह तीन से अधिक भारतीय राज्यों से होकर बहती है।

45. (d) The Deccan Plateau is bounded by the Western Ghats in the west and the Eastern Ghats in the east. It is a volcanic plateau and forms part of the Indian Shield./दक्कन का पठार पश्चिम में पश्चिमी घाट और पूर्व में पूर्वी घाट से घिरा है। यह एक ज्वालामुखीय पठार है और भारतीय शील्ड का हिस्सा है।

46. (a) DRDO has recently developed missiles which move at hypersonic speed giving India edge in new age technology./DRDO ने हाल ही में ऐसी मिसाइलें विकसित की हैं जो हाइपरसोनिक गति से चलती हैं जिससे भारत को नए युग की तकनीक में बढ़त मिलती है।

47. (b) In 2024, the United States and China signed a new trade agreement aimed at reducing tariffs and improving trade relations./2024 में, संयुक्त राज्य अमेरिका और चीन ने टैरिफ को कम करने और व्यापार संबंधों में सुधार के उद्देश्य से एक नए व्यापार समझौते पर हस्ताक्षर किए।

48. (b) Argentina won the 2022 FIFA World Cup, held in Qatar./अर्जेंटीना ने कतर में आयोजित 2022 फीफा विश्व कप जीता।

49. (a) A major milestone in quantum computing was the development of a stable qubit that lasted over 10 minutes, an important step in creating more powerful quantum computers./क्वांटम कंप्यूटिंग में एक प्रमुख मील का पत्थर एक स्थिर क्यूबिट का विकास है, जो 10 मिनट से अधिक समय तक चलता है, जो अधिक शक्तिशाली क्वांटम कंप्यूटर बनाने में एक महत्वपूर्ण कदम है।

50. (d) In 2024, India invested $450 million in its electric vehicle charging infrastructure to promote sustainable transportation./2024 में, भारत ने टिकाऊ परिवहन को बढ़ावा देने के लिए अपने इलेक्ट्रिक वाहन चार्जिंग बुनियादी ढांचे में 450 मिलियन डॉलर का निवेश किया।

C - QUANTITATIVE APTITUDE

51. (b) Divisors 13, 20, 15
Remainders 5, 4, 9

Step-1 : $9 \times 20 + 4 = 184$

Step-2 : $184 \times 13 + 5 = 2397$

$\Rightarrow$ Least such number = 2397

$\Rightarrow$ Generalized number
= (product of divisors) $\times n$ +2397,
Where n = 0,1,2,3,4.....
$= 13 \times 20 \times 15n + 2397$
$= 13 \times 4 \times 5 \times 3 \times 5n + 2397$
$= 13 \times 4 \times 3 \times 25n + 2397$
$= 156 \times 25n + 2397$

$\Rightarrow$ This generalized number will always have same remainder on division by 156.

$\therefore$ Required remainder = R

$\left(\frac{2397}{156}\right) = 57$

52. (c) Let cost of one pen, one Notebook and one file be ₹ p, ₹ n and ₹ f respectively.
ATQ,
$4p + 6n + 8f = 305$.....(i)
$3p + 4n + 2f = 145$.....(ii)
and, $9p + 13n + 14f = ?$
Multiplying eqn. (i) by 3 and eqn. (2) by 2
$2p + 18n + 24f = 305 \times 3$.....(i)
$+6p + 8n + 4f = 145 \times 2$ .....(ii)

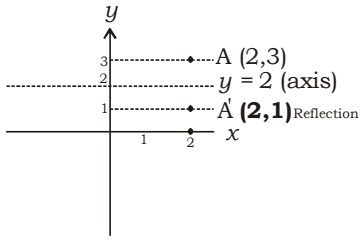
$\Rightarrow 18p + 26n + 28f = 915 + 290$

$\Rightarrow 18p + 26n + 28f = 1205$

$\Rightarrow 9f + 13n + 14f = \frac{1205}{2}$

$\Rightarrow 9p + 13n + 14f = 602.5$

53. (a) **A : B**
Investment 4 : 5
Time 12 : 10
Profit share $4 \times 12 : 5 \times 10$
$= 48 : 50$
$= 24 : 25$
$\therefore$ B's share in profit $= \frac{25 \times 49000}{(24+25)}$
$= \frac{25 \times 49000}{49} = 25 \times 1000$
$= ₹ 25,000$

54. (b)


$\therefore$ Reflection of point A (2,3) in the axis $y = 2$ is A'(2,1)

55. (a) $x^2 - 4x + 11$
$= x^2 - 2 \times 2 \times x + 4 + 7$
$= (x-2)^2 + 7$
We know, $(x-2)^2 \geq 0$
$\Rightarrow x^2 + 4x + 11 = (x-2)^2 + 7 \geq 7$
$\therefore$ Smallest value of $(x^2 - 4x + 11) = 7$

56. (b) ATQ,
Sum of 8 distinct prime numbers = 157 keeping all other numbers as small possible.
$2+3+5+7+11+13+17+P=157$
$P_{max} = 157 - 58 = 99$
As, 99 is not a prime number,
$P_{max} \neq 99$
Now,
$2 + 3 + 5 + 7 + 11 + 13 + 19 + P_{max} = 157$
$P_{max} = 157 - 60 = 97$
$\therefore$ Required largest prime Number = 97

57. (c) Let the radius of circle be r
ATQ,
$\Rightarrow 100 = \frac{\theta}{360^\circ} \times 2\pi r$
$\Rightarrow 100 = \frac{36^\circ}{360^\circ} \times 2 \times \frac{22}{7} \times r$
$\Rightarrow r = \frac{100 \times 360^\circ \times 7}{22 \times 2 \times 36^\circ} = \frac{500}{\pi}\ m$

58. (c) $18^2 + 26^2 = 324 + 676 = 1000 = 10^3$
$8^2 + 6^2 = 64 + 36 = 100 = 10^2$
Now,
$= \frac{(18)^2 + (26)^2 + (13)^3 + (15)^3 - 5850}{8^2 + 6^2 + (13)^2 + (15)^2 - 475}$
$= \frac{(10)^3 + (13)^3 + (15)^3 - 3 \times 10 \times 13 \times 15}{(10)^2 + (13)^2 + (15)^2 - 130 - 150 - 195}$
$= \frac{(10)^3 + (13)^3 + (15)^3 - 3 \times 10 \times 13 \times 15}{(10)^2 + (13)^2 + (15)^2 - 130 - 150 - 195}$
$= \frac{(10)^3 + (13)^3 + (15)^3 - 3 \times 10 \times 13 \times 15}{(10)^2 + (13)^2 + (15)^2 - 13 \times 10 - 15 \times 10 - 13 \times 15}$
$[a^3 + b^3 + c^3 - 3abc = [(a+b+c)(a^2 + b^2 + c^2 - ab - bc - ac)]$
$= \frac{((10)^2 + (13)^2 + (15)^2 - (13 \times 10) - (15 \times 10) - (13 \times 15))(10 + 13 + 15)}{(10)^2 + (13)^2 + (15)^2 - (13 \times 10) - (15 \times 10) - (13 \times 15)}$
$= 10 + 13 + 15 = 38$

59. (c) $1 + 3 + 4 + 5 + 7 + 7 + 9 + \ldots\ldots?$
Above series is 2 mix AP.
$= (1 + 4 + 7 + ..) + (3 + 5 + 7 + 9 + \ldots\ldots\ldots)$
↓ 1st A.P. $a_1 = 1$, $d = 3$
↓ 2nd A.P. $A_1 = 3$, $D = 2$
$\therefore$ Sum $= \frac{20}{2}(2 \times 1 + (20-1) \times 3) + \frac{20}{2}(2 \times 3 + (20-1) \times 2)$
$= 10(59) + 10 \times (44)$
$= 590 + 440$
$= 1030$

60. (d) ATQ,
$\frac{a+b}{c} = \frac{6}{5}$
$\frac{a+b+c}{c} = \frac{6+5}{5}$
$\frac{a+b+c}{c} = \frac{11}{5}$ .....(i)
ATQ,
$\frac{b+c}{a} = \frac{9}{2}$
$\frac{a+b+c}{a} = \frac{9+2}{2}$
$\frac{a+b+c}{a} = \frac{11}{2}$ .....(ii)
Let $a+b+c = 11$
$\Rightarrow c = 5$ & $a = 2$
$\Rightarrow 2 + b + 5 = 11$
$\Rightarrow b = 11 - 7 = 4$
$\Rightarrow a = 2$, $b = 4$ & $c = 5$
$\Rightarrow \frac{a+c}{b} = \frac{2+5}{4} = \frac{7}{4}$

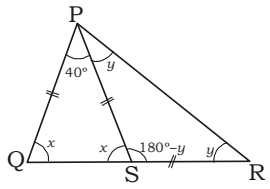
61. (b)
	A	:	B
Efficiency	3	:	1
Days	1	:	3

ATQ,
(3 –1) Units = 40days
1 units = 20 days
$\Rightarrow$ A = 20 days
$\Rightarrow$ B = 20 × 3 = 60 days
Let the total work be 60 units
A's one days work = 3 units
B's one days work = 1 units
(A & B)'s one days work = 4 units
$\therefore$ Required number of days
$= \frac{\left(\frac{60}{2}\right)}{4} = \frac{30}{4}$ days = 7.5 days

62. (a) ATQ,
$\cos Q \times \cos R \times (\cos P - \sin P) + \sin Q \times \sin R \times (\sin P - \cos P)$
$P + Q + R = 60^\circ$
Let, $P = 0^\circ$, $Q = 0^\circ$
$= \cos 0^\circ \times \cos 60^\circ \times (\cos 0^\circ - \sin 0^\circ) + \sin 0^\circ \times \sin 60^\circ \times (\sin 0^\circ - \cos 0^\circ)$
$= 1 \times \frac{1}{2}(1 - 0) + 0 \times \sin 60^\circ \times (\sin 0 - \cos 0)$
$= \frac{1}{2} + 0 = \frac{1}{2}$

63. (c) ATQ,
876p37q is divisible by 275 = 25×11
$\Rightarrow$ Given the number must be divisible by 25 and 11 both.
876q37q $\rightarrow$ can only be divisible by 25 When number formed by last two digits is divisible by 25.
$\Rightarrow$ q = 5
876p375 $\rightarrow$ can only be divisible by 11 when,
$(8+6+3+5) - (7 + p + 7) = 11m$,
Where m = 0,1,2.....
$(8+6+3+5) - (14+p) = 11m$
$8 - p = 11m$
$p = 8 - 11m$
p = 8 at $m = 0$
$\therefore$ p = 8 & q = 5

64. (c)



In ΔPQS

$40° + x + x = 180°$

$\Rightarrow 2x = 140°$

$\Rightarrow x = 70°$

In ΔPSR

$180° - x + y + y = 180°$

$\Rightarrow -x + 2y = 0$

$\Rightarrow x = 2y$

$\Rightarrow y = \frac{70°}{2} = 35°$

$\Rightarrow \angle QPR = \angle QPS + \angle SPR = 40° + 35°$

$\therefore \angle QPR = 75°$

65. (d) $\frac{2P}{P^2 - 2P + 1} = \frac{1}{4}$

$\Rightarrow \frac{P^2 - 2P + 1}{2P} = 4$

$\Rightarrow \frac{P}{2} - 1 + \frac{P}{2P} = 4$

$\Rightarrow \frac{P}{2} + \frac{1}{2P} = 5$

$\Rightarrow P + \frac{1}{P} = 10$

66. (b) $\frac{\cos ec^2\alpha - \sec^2\alpha}{\cos ec^2\alpha + \sec^2\alpha}$

$= \frac{\frac{\cos ec^2\alpha}{\sec^2\alpha} - 1}{\frac{\cos ec^2\alpha}{\sec^2\alpha} + 1}$

$= \frac{\frac{\cos^2\alpha}{\sin^2\alpha} - 1}{\frac{\cos^2\alpha}{\sin^2\alpha} + 1}$

$= \frac{\cot^2\alpha - 1}{\cot^2\alpha + 1}$

$\tan\alpha = 2 \Rightarrow \cot\alpha = \frac{1}{2}$

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

$= \frac{\frac{1-4}{4}}{\frac{1+4}{4}} = \frac{-3}{5}$

67. (c) $x = a(\sin\theta + \cos\theta)$

$\Rightarrow \frac{x}{a} = (\sin\theta + \cos\theta)$

and, $y = b(\sin\theta + \cos\theta)$

$\Rightarrow \frac{y}{b} = (\sin\theta - \cos\theta)$

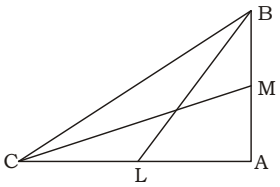
$\Rightarrow \frac{x^2}{a^2} + \frac{y^2}{b^2} = (\sin\theta + \cos\theta)^2 + (\sin\theta - \cos\theta)^2$

$\Rightarrow \frac{x^2}{a^2} + \frac{y^2}{b^2} = 2(\sin^2\theta + \cos^2\theta)$

$\Rightarrow \frac{x^2}{a^2} + \frac{y^2}{b^2} = 2$

68. (b) From $\triangle ABC$

$BC^2 = AB^2 + AC^2$



From $\triangle ABL$

$BL^2 = AL^2 + AB^2$

$\Rightarrow BL^2 = \left(\frac{AC}{2}\right)^2 + AB^2$ [L mid point of AC]

$\Rightarrow BL^2 = \frac{AC^2}{4} + AB^2$

$\Rightarrow 4BL^2 = AC^2 + 4AB^2$ .....(i)

From $\triangle CMA$

$\Rightarrow CM^2 = AC^2 + AM^2$

$\Rightarrow CM^2 = AC^2 + \left(\frac{AB}{2}\right)^2$ [M midpoint of AB]

$\Rightarrow 4CM^2 = 4AC^2 + AB^2$.....(ii)

$\Rightarrow$ Adding eqn. (i) & (ii)

$\Rightarrow 4(BL^2 + CM^2) = 5(AC^2 + AB^2)$

$\Rightarrow 4(BL^2 + CM^2) = 5BC^2$

69. (a) Let the speed of the stream be x km/hr

$\Rightarrow$ Upstream speed = (18 – x)

$\Rightarrow$ Downstream speed = 18 + x

ATQ,

$\frac{24}{18 - x} - \frac{24}{18 + x} = 1$

$\Rightarrow 24(18 + x) - 24(18 - x) = (18 - x)(18 + x)$

$\Rightarrow x^2 + 48x - 324 = 0$

$\Rightarrow x^2 + 54x - 6x - 324 = 0$

$\Rightarrow (x + 54)(x - 6) = 0$

$x = -54$ or $x = 6$

$\therefore$ Speed of stream = x = 6km/hr

70. (b) Let cost price milk per kg be = ₹ x

ATQ,

$(15 + 3) \times 22 = 15 \times x$

$\Rightarrow \frac{18 \times 22}{15} = x$

$\Rightarrow x =$ ₹ 26.4/kg

71. (a) Let the number of boys be x

$\Rightarrow$ Number of girls = (150 – x)

ATQ,

$\Rightarrow 150 \times 160 = (150 - x) \times 55 + x \times 70$

$\Rightarrow 150 \times 60 = 55 \times 150 - 55x + 70x$

$\Rightarrow 150 \times 60 = 55 \times 150 + 15x$

$\Rightarrow 600 = 55 \times 10 + x$

$\Rightarrow x = 600 - 550 = 50$

72. (c) In $\triangle ABC$

$\angle A + \angle B + \angle C = 180°$

$\Rightarrow \frac{1}{2}\angle A + \frac{1}{3}\angle B + \frac{1}{3}\angle C = 90°$.....(i)

ATQ,

$\Rightarrow \frac{1}{2}\angle A + \frac{1}{3}\angle C + \frac{1}{2}\angle B = 80°$.....(i)

Substracting eqn. (ii) from eqn. (i)

$\Rightarrow \frac{1}{2}\angle C - \frac{1}{3}\angle C = 90° - 80°$

$\Rightarrow \frac{1}{6}\angle C = 10°$

$\Rightarrow \angle C = 60°$

73. (c) Let the number whose digits got interchange be = X

and interchanged number = X′

ATQ,

$\Rightarrow X - X' = 3.6 \times 10$

$\Rightarrow X - X' = 36$

Let $X = 10x + y$

$X' = 10y + x$

$\Rightarrow (10x + y) - (10y + x) = 36$

$\Rightarrow 9x - 9y = 36$

$\Rightarrow x - y = 4$

$\therefore$ Required difference = 4

74. (c) Let the age of each member be A_1, A_2, A_3, A_4, A_5 respectively.

ATQ,

$$\Rightarrow \frac{A_1 + A_2 + A_3 + A_4 + A_5}{5}$$

$\Rightarrow A_1 + A_2 + A_3 + A_4 + A_5 = 55 \times 5$ .....(i)

$$\Rightarrow \frac{A_1 + A_2 + A_3}{3} = 55$$

$\Rightarrow A_1 + A_2 + A_3 = 55 \times 3$ .....(ii)

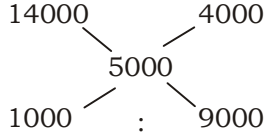
From eqn. (i) & eqn. (2)

$A_4 + A_5 = 55 \times 5 - 55 \times 3 = 55 \times 2$

$$\Rightarrow \frac{A_4 + A_5}{2} = 55 = \text{Average of } A_4 \text{ \& } A_5$$

$\therefore$ Required average = 55 years

75. (d)



Officer : Other = 1 : 9

$\therefore$ Number of officers

$$= 500 \times \frac{1}{1+9} = \frac{500}{10} = 50$$

D-ENGLISH COMPREHENSION

76. (a) William Wordsworth was a romantic poet. He did things in an unusual manner.

The indefinite article "a" is used before "romantic poet" because it refers to Wordsworth as one among many poets of the Romantic period.

The indefinite article "an" is used before "unusual manner" because "unusual" starts with a vowel sound.

77. (b) **(When Serena arrives)** uses the present simple tense, while the **main clause (she will call you)** uses the future simple tense .

According to 1st Conditional: When/If + Present Simple, Future Simple.

78. (b) **Cramped (भीड़ ठूंसा हुआ)** means feeling or causing someone to feel uncomfortably confined or hemmed in by lack of space. Its opposite is **Spacious (जगह से भरपूर)**, which means having ample space.

Crammed (ठूंस ठूंस के भरा हुआ) means completely fill (a place or container) to the point of overflowing.

Filthy (गंदा) means disgustingly dirty.

Tight (कसा हुआ) means fixed, fastened, or closed firmly; hard to move, undo, or open.

79. (c) The correct spelling is **"frustration."**

80. (a) Rachit had some important work and so he cancelled the show tickets for everyone.

Dog in the manger (जो दूसरो को भी उस चीज के मजे लेने नहीं देता जो वह नहीं ले पाता) : refers to someone who prevents others from benefiting from something they do not use or want themselves.

81. (b) **Convinced (विश्वस्त) :** means having a strong belief or being sure about something. In this context, it suggests that while the speaker is doubtful about the story, the other person seems sure or convinced about it.

Pleasant (आनंदजनक) : refers to something enjoyable or agreeable.

Regretting (पछताना): refers to feeling sorrow or remorse.

Uncertain ((अनिश्चित): means not sure.

82. (b) The correct order is CDAB.

The sequence starts with Fotik's progress (**C**), followed by his backstory of being helped by upen (**D**), details of the agreement (**A**), and concludes with the salary payment in advance(**B**).

83. (c) **Outflow (प्रवाह)** means the movement or transfer of something out of a place. Its opposite is **Influx (प्रवेश)**, which means an arrival or entry of large numbers of people or things.

Deluge (बाढ़) means a severe flood.

Income (आय) means money received, especially on a regular basis, for work or through investments.

Torrent (तेज धारा)

84. (c) **Has the car been broken by them?**

Active Voice: Auxiliary Verb ("Have") + Subject + Main Verb (Past Participle: "broken") + Object

Passive Voice: Auxiliary Verb ("Has") + Object ("the car") + "been" + Main Verb (Past Participle: "broken") + "by" + Subject

85. (c) The correct spelling is **Schedule**, means a plan or timetable of activities or events.

Literature (साहित्य) : Refers to written works, especially those considered of superior or lasting artistic merit.

Reformation (सुधार): Refers to the process of improvement or change, particularly in a social or religious context.

Miserable (दुःखद) : Describes a state of being very unhappy, uncomfortable, or in distress.

86. (a) made us wait

"Made" is a causative verb here, and when used in active voice it's followed by the object ("us") and the base form of the verb ("wait"), without "to".

87. (a) **Pertinent (प्रासंगिक)** means relevant or applicable to a particular matter. Similarly, **Relevant (प्रासंगिक)** , means closely connected or appropriate to the matter at hand.

Unrelated (असंबद्ध) means not related or connected.

Puzzling (पेचीदा) means causing confusion or bafflement.

Living (जीवित) means the condition of being alive.

88. (b) **Among** is used when referring to a group of things or people. In this case, "all the entries" is a group, so "among" is the correct.

Between is used for two things or people.

89. (b) **"Come up with"** means to think of or create something, such as an idea or a solution.

90. (b) **"Had been fined" (past perfect tense)**, is used to describe an action that was completed before another action or time in the past. Since the fine occurred **last evening**, and Anurag is talking about it in the past (he's reporting it).

91. (a) **Soorya walked to college every day:** This uses the simple past tense, which is appropriate for describing a habitual action that occurred regularly in the past, as indicated by "every day."

92. (b) **Let him repair the fence.**

Passive Voice: Let + Object ("the fence") + "be" + Past Participle ("repaired") + "by" + Subject ("him").

Active Voice: Let + Subject ("him") + Base Verb ("repair") + Object ("the fence").

93. **(d)** The word **"ice"** is an **uncountable noun**, and indefinite articles like **"a"** or **"an"** are not used with uncountable nouns. Instead, **"an ice cube"** or simply **"some ice"** should be used.

94. (b) **"give someone the cold shoulder"** means to deliberately ignore or show indifference to someone as a way of expressing displeasure or rejection.

95. (c) **Strenuous (कठोर)** means requiring or using great effort or exertion. Similarly, **Formidable (दुर्जेय)** means inspiring fear or respect through being impressively large, powerful, intense, or capable.

Effective (प्रभावी) means successful in producing a desired or intended result.

Amicable (मैत्रीपूर्ण) means having a spirit of friendliness; without serious disagreement or rancor.

Manageable (संचालनीय) means able to be controlled or dealt with without difficulty.

96. (b)
97. (d)
98. (b)
99. (b)
100. (b)

ANSWER KEY

1. (c)	21. (a)	41. (b)	61. (b)	81. (b)
2. (c)	22. (a)	42. (a)	62. (a)	82. (b)
3. (b)	23. (a)	43. (a)	63. (c)	83. (c)
4. (d)	24. (b)	44. (a)	64. (c)	84. (c)
5. (d)	25. (c)	45. (d)	65. (d)	85. (c)
6. (a)	26. (b)	46. (a)	66. (b)	86. (a)
7. (d)	27. (c)	47. (b)	67. (c)	87. (a)
8. (a)	28. (a)	48. (b)	68. (b)	88. (b)
9. (d)	29. (c)	49. (a)	69. (a)	89. (b)
10. (d)	30. (c)	50. (d)	70. (b)	90. (b)
11. (c)	31. (c)	51. (b)	71. (a)	91. (a)
12. (c)	32. (c)	52. (c)	72. (c)	92. (b)
13. (b)	33. (c)	53. (a)	73. (c)	93. (d)
14. (a)	34. (b)	54. (b)	74. (c)	94. (b)
15. (a)	35. (c)	55. (a)	75. (d)	95. (c)
16. (b)	36. (a)	56. (b)	76. (a)	96. (b)
17. (c)	37. (c)	57. (c)	77. (b)	97. (d)
18. (a)	38. (b)	58. (c)	78. (b)	98. (b)
19. (a)	39. (a)	59. (c)	79. (c)	99. (b)
20. (d)	40. (b)	60. (d)	80. (a)	100.(b)