SSC CGL | SPECIAL MOCK TEST – 68 : SOLUTIONS

A-GENERAL INTELLIGENCE & REASONING

1. (c) P $\xleftarrow{-\text{Mother}}$ Q $\xleftarrow{\text{H/W}}$ R $\xleftarrow{-\text{sister}}$ S $\xleftarrow{\text{Daughter}}$ T
Daughter's Husband

2. (a) RAB SZD TYF UXH **VWJ**
(−1, −1, −1, −1; +1, +2, +1, +2, +1, +2, +1, +2)

3. (a) $75 \div 8 \times 6 + 24 - 6 = 31$
After interchanging the sign we get:
$\Rightarrow 75 - 8 \times 6 + 24 \div 6 = 31$
$\Rightarrow 75 - 8 \times 6 + 4 = 31$
$\Rightarrow 79 - 48 = 31$
$\Rightarrow 31 = 31$ (L.H.S = R.H.S)

4. (c) A Y T R E S (+1 each) → S F T U Z B

M I N T E D (+1 each) → U F E O J N

Similarly,

L T R E A D (+1 each) → **F B E S U M**

5. (b) XY**Z**XY / **XY**ZXY / X**YZ**XY / XY**ZXY**

6. (b)

7. (b) 5, 3, 1, 4, 2

8. (d)

9. (d) (85, 198, 52)
$\Rightarrow (85 - 52) \times 6$
$\Rightarrow 33 \times 6 = 198$ (middle term)
(77, 270, 32)
$\Rightarrow (77 - 32) \times 6$
$\Rightarrow 45 \times 6 = 270$ (middle term)
Similarly,
$\Rightarrow$ (62, 90, 47)
$\Rightarrow (62 - 47) \times 6 = 15 \times 6 = 90$ (middle term)

10. (d) (12, 8, 16)
$\Rightarrow (12 - 8)^2 = (4)^2 = 16$ (last term)
(22, 10, 144)
$\Rightarrow (22 - 10) = (12)^2 = 144$ (last term)
Similarly,
(18, 8, 100)
$\Rightarrow (18 - 8) = (10)^2 = 100$ (last term)

11. (c) P L U R A L (+1 each) → M Q S V M B

S I N G L E (+1 each) → J T H O F M

Similarly,

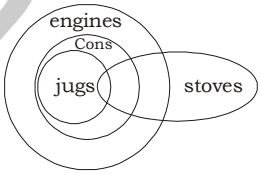
D O U B L E (+1 each) → P E C V F M

12. (a)

13. (b)

14. (b)

15. (d) 14 : 85
$\Rightarrow 85 = (14 \times 6) + 1$
$\Rightarrow 85 = 84 + 1$
$\Rightarrow 85 = 85$
20 : 121
$\Rightarrow 121 = (20 \times 6) + 1$
$\Rightarrow 121 = 120 + 1$
$\Rightarrow 121 = 121$
Similarly,
11 : x
$x = (11 \times 6) + 1$
$x = 66 + 1$
$x = 67$

16. (c)


17. (a) Daughter | $B^+ \xleftrightarrow{\text{H/w}} A^-$ (Son); $C^- \xrightarrow{\text{Sister}} D^- \xrightarrow{\text{Brother}} E^+$

18. (c) 17C 12A (6B4) D8 A15 D5
$17 - 12 + (6 \times 4) \div 8 + 15 \div 5$
$17 - 12 + 24 \div 8 + 3$
$23 - 12 = 11$

19. (d)

20. (d)

21. (d) R I S E (−1, +1, −1, +1, −1, +1, −1, +1) → Q S H J R T D F

F A L L (−1, +1, −1, +1, −1, +1, −1, +1) → E G Z B K M K M

Similarly.

K I N G (−1, +1, −1, +1, −1, +1, −1, +1) → **J L H J M O F H**

22. (d)


23. (c) 52, **77,** 113, 162, 226, 307
+25, +36, +49, +64, +81
$(5)^2$, $(6)^2$, $(7)^2$, $(8)^2$, $(9)^2$

24. (c) 14 : 207
$= 14^2 + 11$
$\Rightarrow 196 + 11 = 207$
12 : 155
$= 12^2 + 11$
$\Rightarrow 144 + 11 = 155$
$\Rightarrow$ 18 : 345 **(odd)**
$= 18^2 + 11$
$\Rightarrow 324 + 11 = 335 \neq 345$
16 : 267
$= 16^2 + 11$
$\Rightarrow 256 + 11 = 267$

25. (d) $Q \xrightarrow{+2} S \xrightarrow{+2} U$
$J \xrightarrow{+2} W \xrightarrow{+2} Y$
$C \xrightarrow{+2} E \xrightarrow{+2} G$
$H \xrightarrow{+2} J \xrightarrow{-1} I$ **(odd)**

B-GENERAL AWARENESS

26. (d) Al-Biruni's Kitab-ul-Hind is a vast work divided into 80 chapters. It discusses diverse subjects such as religion, philosophy, astronomy, chemistry, customs and traditions, social life, weights and measures, iconography, and law. This work was written in Arabic.

अल-बिरूनी की किताब-उल-हिंदी एक विशाल कृति है, जो 80 अध्यायों में बंटी हुई है। इसमें धर्म, दर्शन, खगोल विज्ञान, रसायनशास्त्र, रीति-रिवाज, सामाजिक जीवन, वजन और माप, प्रतिमा विद्या, कानून जैसे विविध विषयों पर चर्चा की गई है। यह कृति अरबी में लिखी गई है।

27. (a) Bhadam is the traditional dance of the Bharia tribe of Madhya Pradesh, also known by names such as Gunnu Sahi, Bhadni, Bhadnei, Bharanoti, or Bhangam dance. This dance is specially performed on the occasion of marriage and holds an important cultural place in the society.
भड़म मध्य प्रदेश की भारिया जनजाति का पारंपरिक नृत्य है, जिसे गुन्नू साही, भड़नी, भडनई, भरनोती या भंगम नृत्य जैसे नामों से भी जाना जाता है। यह नृत्य विशेष रूप से विवाह के अवसर पर आयोजित किया जाता है और समाज में महत्वपूर्ण सांस्कृतिक स्थान रखता है।

28. (c) The National Overseas Scholarship is a Central Sector Scheme that provides opportunities for low-income students to study for a Master's degree or PhD abroad, thereby improving their economic and social status. This scholarship is for Scheduled Castes, nomadic tribes, landless agricultural labourers, and traditional artisans.
नेशनल ओवरसीज स्कॉलरशिप केंद्रीय क्षेत्र योजना कम आय वाले छात्रों को विदेश में मास्टर डिग्री या पीएचडी के लिए अध्ययन की सुविधा प्रदान करती है, जिससे उनकी आर्थिक और सामाजिक स्थिति में सुधार होता है। यह स्कॉलरशिप अनुसूचित जाति, घुमंतू जनजातियों, भूमिहीन कृषि मजदूरों और पारंपरिक कारीगरों के लिए है।

29. (a) At the time of independence, most of India's foreign trade was limited to Britain, while attention was also focused on countries like China, Sri Lanka (Ceylon), and Iran (Persia). India imported finished consumer goods such as silk, light machinery, and cotton from Britain.
स्वतंत्रता के समय भारत का अधिकांश विदेशी व्यापार ब्रिटेन तक सीमित था, जबकि चीन, श्रीलंका (सीलोन) और ईरान (फारस) जैसे देशों पर भी ध्यान केंद्रित किया गया था। भारत ब्रिटेन से रेशम, हल्की मशीनरी और कपास जैसी तैयार उपभोक्ता वस्तुएं आयात करता था।

30. (c) A forest area is the legal status in which the government notifies an area as a forest. There is no notified forest in the Union Territory of Lakshadweep, although nearly 85% of its area is covered by forests, and 82% of the land is covered by coconut plantations.
वन क्षेत्र वह कानूनी स्थिति है, जिसमें सरकार किसी क्षेत्र को वन के रूप में अधिसूचित करती है। केंद्र शासित प्रदेश लक्षद्वीप में कोई अधिसूचित वन नहीं है, हालांकि यहाँ का लगभग 85% क्षेत्र वन से आच्छादित है, और 82% भूमि नारियल बागानों द्वारा कवर की जाती है।

31. (a) In Telangana, Warangal, Secunderabad, and Hyderabad are famous for the concentration of cotton spinning mills. The state has about 33 spinning mills with a total capacity of approximately 10 lakh spindles. In addition, Telangana is developing a Mega Textile Park in Warangal.
तेलंगाना में वारंगल, सिकंदराबाद और हैदराबाद कपास कताई मिलों की सघनता के लिए प्रसिद्ध हैं। राज्य में लगभग 33 कताई मिलें हैं, जिनकी कुल क्षमता लगभग 10 लाख तकलियाँ है। इसके अलावा, तेलंगाना वारंगल में एक मेगा टेक्सटाइल पार्क विकसित कर रहा है।

32. (c) According to the doctrine of severability (also known as the principle of separability), if any part of a law is inconsistent or repugnant to the fundamental rights under the Indian Constitution, that part shall be declared void, and not the entire law or Act.
पृथक्करणीयता के सिद्धांत, जिसे पृथक्करण का सिद्धांत भी कहा जाता है, के अनुसार यदि भारतीय संविधान के मौलिक अधिकारों के साथ किसी कानून का कोई हिस्सा असंगत या आक्रामक है, तो उस हिस्से को शून्य घोषित किया जाएगा, न कि पूरे कानून या अधिनियम को।

33. (c) Maharashtra recorded the highest decline in decadal growth rate during the 2001-2011 period as per the 2011 Census. In 2011, its decadal growth rate was 15.99%, compared to 22.73% in 2001. This decline indicates a significant reduction in the state's population growth rate.
महाराष्ट्र ने 2011 की जनगणना में 2001-2011 की दशकीय वृद्धि दर में सबसे अधिक गिरावट दर्ज की। 2011 में इसकी दशकीय वृद्धि दर 15.99% थी, जो 2001 में 22.73% थी। यह गिरावट दर्शाती है कि राज्य की जनसंख्या वृद्धि दर में महत्वपूर्ण कमी आई है।

34. (a) The 1901 Calcutta Session was the first occasion when Mahatma Gandhi appeared on the Congress platform. At that time, Gandhi was a lawyer in South Africa and urged the Congress to cooperate in the struggle against racial discrimination and exploitation in the country.

1901 का कलकत्ता अधिवेशन महात्मा गांधी के कांग्रेस के मंच पर आने का पहला अवसर था। उस समय, गांधी जी दक्षिण अफ्रीका में वकील थे और उन्होंने कांग्रेस से देश में नस्लीय भेदभाव और शोषण के खिलाफ संघर्ष में सहयोग का आग्रह किया था।

35. (d) During the excavation of Mohenjo-daro in Sindh, Pakistan, in 1925-26, a small male figurine was found, known as the Priest King statue. It dates to approximately 2000-1900 BCE and is considered the most famous stone sculpture of the Indus Valley Civilization, depicting a bearded man.
1925–26 में पाकिस्तान के सिंध में मोहनजोदड़ो की खुदाई के दौरान एक छोटी पुरुष आकृति की मूर्ति मिली, जिसे पुजारी राजा की मूर्ति कहा जाता है। यह लगभग 2000 – 1900 ईसा पूर्व की है और सिंधु घाटी सभ्यता की सबसे प्रसिद्ध पत्थर की मूर्ति मानी जाती है, जिसमें दाढ़ी वाला व्यक्ति दिखाया गया है।

36. (a) Hind Swaraj or Indian Home Rule, written by Gandhi in 1909, is a book he authored in his mother tongue Gujarati during a voyage from London to South Africa. In it, Gandhi expressed his views on Swaraj, modern civilization, and other social issues.
हिंद स्वराज या इंडियन होम रूल, 1909 में गांधी द्वारा लिखी गई एक पुस्तक है। यह पुस्तक उन्होंने लंदन से दक्षिण अफ्रीका की यात्रा के दौरान अपनी मातृभाषा गुजराती में लिखी। इसमें गांधी ने स्वराज, आधुनिक सभ्यता और अन्य सामाजिक मुद्दों पर अपने विचार व्यक्त किए हैं।

37. (b) To provide social security and welfare to unorganized workers, the Indian Parliament passed the Unorganized Workers' Social Security Act, 2008. It received presidential assent on 30 December 2008. Later, it was replaced by the Code on Social Security, 2020.
असंगठित श्रमिकों को सामाजिक सुरक्षा और कल्याण प्रदान करने के लिए भारतीय संसद ने असंगठित श्रमिकों को सामाजिक सुरक्षा अधिनियम, 2008 पारित किया। इसे 30 दिसम्बर, 2008 को राष्ट्रपति की स्वीकृति मिली। बाद में, इसे द कोड ऑन सोशल सिक्योरिटी, 2020 द्वारा प्रतिस्थापित किया गया।

38. (b) To obtain Net National Product (NNP) at factor cost from Net Domestic Product (NDP) at market prices, subtract indirect taxes, add subsidies, and add net factor income from abroad. Formula: NNP (at factor cost) = NDP (at market price) – Indirect Taxes + Subsidies + Net Factor Income from Abroad.
कारक लागत पर शुद्ध राष्ट्रीय उत्पाद (एनएनपी) प्राप्त करने के लिए बाजार मूल्य पर शुद्ध राष्ट्रीय उत्पाद (एनडीपी) से अप्रत्यक्ष कर घटाकर और सब्सिडी जोड़कर शुद्ध कारक आय को जोड़ना चाहिए। सूत्र: एनएनपी (कारक लागत पर) = एनडीपी (बाजार मूल्य पर) – अप्रत्यक्ष कर + सब्सिडी + शुद्ध कारक आय।

39. (d) The barter system is when goods and services of equal value are exchanged between two parties without any monetary medium. This system helps in trading without cash as well as in building better mental understanding and relationships between traders.
वस्तु विनिमय प्रणाली तब होती है जब समान मूल्य की वस्तुएं और सेवाएं बिना किसी मौद्रिक विनिमय के दो पक्षों के बीच आदान-प्रदान होती हैं। यह प्रणाली नकदी के बिना व्यापार करने के साथ-साथ व्यापारियों के बीच बेहतर मानसिक समझ और संबंध स्थापित करने में भी मदद करती है।

40. (b) The Hornbill Festival is celebrated every year in Nagaland and is called the 'Festival of Festivals'. It is held in Kohima from 1 to 7 December. It is named after the Indian hornbill bird, which is famous for its large and colourful appearance.
हॉर्नबिल उत्सव हर साल नगालैंड में मनाया जाता है और इसे 'त्योहारों का त्योहार' कहा जाता है। यह उत्सव कोहिमा में 1 से 7 दिसम्बर के बीच आयोजित होता है। इसका नाम भारतीय हॉर्नबिल पक्षी के नाम पर रखा गया है, जो अपनी बड़ी और रंगीन उपस्थिति के लिए प्रसिद्ध है।

41. (c) When white light passes through a prism, the violet colour has the shortest wavelength, hence the highest refractive index, causing it to deviate (bend) the most. Conversely, the red colour has the longest wavelength, so it deviates the least.
जब श्वेत प्रकाश प्रिज्म से गुजरता है, तो बैंगनी रंग का तरंगदैर्ध्य (Wavelength) सबसे कम होने के कारण इसका अपवर्तनांक सबसे अधिक होता है, जिससे यह सबसे अधिक विचलित (झुकता) होता है। इसके विपरीत, लाल रंग का तरंगदैर्ध्य सबसे अधिक होने के कारण उसका विचलन सबसे कम होता है।

42. (a) Gold is a highly inert (least reactive) metal chemically. It does not easily react with air, water, oxygen, or acids. Due to this high chemical inertness, gold is always found in nature in a free (native) state rather than in combination with other elements.
In contrast, metals like sodium are highly reactive and are always found in combined form (as compounds).

स्वर्ण (सोना) रासायनिक रूप से बेहद निष्क्रिय (कम प्रतिक्रियाशील) धातु है। यह हवा, पानी, ऑक्सीजन या अम्लों के साथ आसानी से क्रिया नहीं करता है। इसी उच्च रासायनिक निष्क्रियता के कारण सोना प्रकृति में किसी अन्य तत्व के साथ संयुक्त न होकर सदैव मुक्त (स्वतंत्र) स्थिति में पाया जाता है।
इसके विपरीत, सोडियम जैसी धातुएं अत्यधिक प्रतिक्रियाशील होने के कारण हमेशा संयुक्त अवस्था (जैसे यौगिकों के रूप में) में मिलती हैं।

43. (c) Vertebrates are animals with an internal backbone or spinal column.
- Animals without a backbone are called invertebrates, e.g., silverfish, spider, silkworm.
- Vertebrates include mammals, birds, fish, amphibians, and reptiles.
- Snails are invertebrates.

कशेरुक एक आंतरिक रीढ़ या रीढ़ की हड्डी वाले जानवर हैं
- जो जानवर कशेरुक नहीं होते हैं उन्हें अकशेरुकी कहा जाता है। जैसे, सिल्वरफिश, मकड़ी, रेशम का कीड़ा
- कशेरुकियों में स्तनधारी, पक्षी, मछली, उभयचर और सरीसृप शामिल होते हैं।
- घोंघे अकशेरूकीय हैं।

44. (b) To bookmark (save) the current webpage in a web browser (such as Google Chrome, Microsoft Edge, Mozilla Firefox), the shortcut key Ctrl + D is used.
- Ctrl + B: To show/hide the bookmarks bar or favourites menu.
- Ctrl + F: To find a word on the page.
- Ctrl + H: To open browsing history.

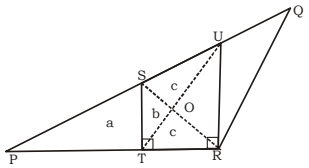
वेब ब्राउजर (जैसे Google Chrome, Microsoft Edge, Mozilla Firefox) पर वर्तमान वेबपेज को बुकमार्क (सेव) करने के लिए Ctrl + D शॉर्टकट कुंजी का उपयोग किया जाता है।
- Ctrl + B: बुकमार्क बार या पसंदीदा मेनू को खोलने/छिपाने के लिए।
- Ctrl + F: पेज पर किसी शब्द को खोजने (Find) के लिए।
- Ctrl + H: ब्राउजिंग इतिहास खोलने के लिए।

45. (b) Savanna grasslands are mainly found in the African continent (especially in East Africa such as Tanzania and Kenya). It is a tropical grassland that develops in the tropical regions on both sides of the equator. Tall and dense grass with scattered small trees is found here.
सवाना घास के मैदान मुख्य रूप से अफ्रीका महाद्वीप (विशेषकर पूर्वी अफ्रीका जैसे तंजानिया और केन्या) में पाए जाते हैं। यह एक उष्णकटिबंधीय घास का मैदान (Tropical Grassland) है, जो भूमध्य रेखा के दोनों ओर उष्णकटिबंधीय क्षेत्रों में विकसित होता है। यहाँ दूर-दूर फैले छोटे पेड़ों के साथ लंबी और घनी घास पाई जाती है।

46. (a)
47. (b)
48. (b)
49. (a)
50. (d)

C - QUANTITATIVE APTITUDE

51. (c) Area of ΔPTU = Area of ΔPTS + Area of ΔTUS
ST || UR



$\Rightarrow$ STRU is trapezium
Area ΔSOU = Area ΔTOR [Area formed by non parallel side are equal]
RS is median of ΔPRQ

$\Rightarrow$ Area of $\Delta PSR = \frac{36}{2} = 18$ sq. units

$\therefore$ Required area = Area of ($\Delta PTS + \Delta TOS + \Delta SOU$)
= Area of ($\Delta PTS + \Delta TOS + \Delta TOR$)
= Area of (ΔPSR)
= 18sq. units

52.(a) Let C.P. be = ₹ x

$$S.P. = \left(1+\frac{25}{100}\right)x = 1.25x$$

$$C.P_2 = \left(1-\frac{20}{100}\right)x = 0.8x$$

$$S.P_2 = 1.25x - 10.5$$

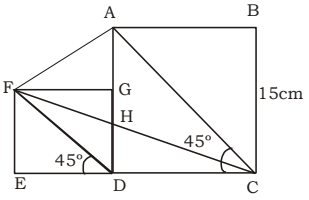
ATQ,
Profit = 30%

$$\Rightarrow \frac{S.P.}{C.P.} = \frac{13}{10}$$

$$\Rightarrow \frac{1.25x-10.5}{0.8x} = \frac{13}{10}$$

$\Rightarrow 12.5x - 105 = 13 \times 0.8x$
$\Rightarrow 12.5x - 105 = 10.4x$
$\Rightarrow 12.5x - 10.4x = 105$
$\Rightarrow 2.1x = 105 \Rightarrow x =$ ₹ 50

53.(c)



FD || AD [$\angle FDE = \angle ACD = 45°$]
In Trapezium AFDC, AD and FC are diagonals & AF and DC are non- parallel sides.
Area of ΔAFH = Area of ΔHDC [Triangles an non-parallel sides of trapezium]
Now,
Required area = Area of ΔFAH +Area of ΔAHC
= Area of ΔHDC + Area of ΔAHC
= Area of ΔADC

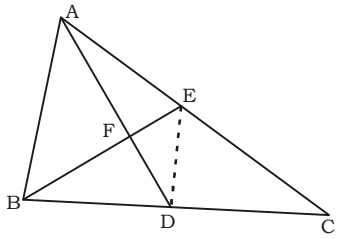
$$= \frac{1}{2} \text{ Area of square ABCD}$$

[AC is diagonal of square ABCD]

$$= \frac{1}{2} \times 15 \times 15 = \frac{225}{2} \text{ cm}^2$$

$= 112.5\text{cm}^2$

54.(d) ATQ,
Area ΔBFD = Area ΔAFE
$\Rightarrow$ ABDE is a trapezium
$\Rightarrow$ DE || AB



Now, $\Delta DCE \sim \Delta BCA$

[$\angle C$ = common, DE || AB]

$$\Rightarrow \frac{DC}{BC} = \frac{DE}{AB}$$

$$\Rightarrow \frac{5}{5+2} = \frac{DE}{12}$$

$$\Rightarrow DE = \frac{12\times 5}{7} = \frac{60}{7}\text{ cm}$$

55.(b) Pune to lonavala,
lonavala to mumbai
Distance = 40km,
Distance = 100km
Let Speed = x $\Rightarrow$ Speed = $2x$

$$\Rightarrow \text{Time} = \frac{40}{x}, \Rightarrow \text{Time} = \frac{100}{2x}$$

ATQ,

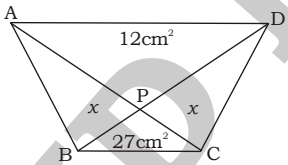
$$\frac{40}{x} + \frac{100}{2x} = 3$$

$$\Rightarrow \frac{40}{x} + \frac{50}{x} = 3$$

$$\Rightarrow \frac{90}{x} = 3$$

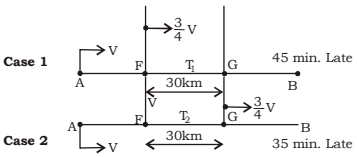
$\Rightarrow x$ = 30km/hr
$\Rightarrow$ & $2x$ = 60km/hr
$\therefore$ Required speeds = 30km/h, 60km/h

56. (c) Area ΔPBP = Area ΔBPC



$\Rightarrow$ ABCD is a trapezium
$\Rightarrow$ AD || BC
$\Rightarrow$ Area of ΔABP = Area of ΔDPC = x
In a trapezium product of opposite triangle's area is same
$\Rightarrow$ Area of ΔABP × Area of ΔDPC = Area of ΔAPD × Area of ΔBPC
$\Rightarrow x \times x = 27 \times 12$
$\Rightarrow x^2 = 27 \times 12$
$\Rightarrow x^2 = 3\times3\times3\times3\times2\times2$
$\Rightarrow x = 3\times3\times2$
$\Rightarrow x$ = 18sq.cm
$\therefore$ Required area = (27 + 18 + 18 + 12)
= 75cm^2

57.(a) Let the usual speed be V



From A to F and G to B, in both case speed, distance and time are same.
From F to G

$$T_1 = \frac{30}{\frac{3}{4}V} \quad \& \quad T_2 = \frac{30}{V}$$

ATQ,

$$T_1 - T_2 = \frac{45-35}{60}$$

$$\frac{30\times4}{3V} - \frac{30}{V} = \frac{10}{60}$$

$$\Rightarrow \frac{30\times4}{3V} - \frac{30}{V} = \frac{10}{60}$$

$$\Rightarrow \frac{40}{V} - \frac{30}{V} = \frac{10}{60}$$

$$\Rightarrow \frac{10}{V} = \frac{10}{60}$$

$\Rightarrow V$ = 60 km/hr

58. (a) Let the length, breadth & height be l, b, h respectively.
ATQ,
$lb = 72$ .....(1)
$lbh = 720$ .....(2)
$2(lb + bh + hl) = 484$
$\Rightarrow (lb + bh + hl) = 242$ ....(3)
from equation (1) & (2)
$h = 10cm$
Putting h = 10 in equation (3)
$72 + 10b + 10l = 242$
$\Rightarrow 10b + 10d = 242 - 72 = 170$
$\Rightarrow b + l = 17$
Now, $bl = 72$
$b + l = 17$
$\Rightarrow l = 9$ & $b = 8$
$\therefore$ Length, breadth , height = 9, 8, 10cm

59. (a) For n = 3 year
Let r be required rate

$$\& \; x = \frac{100}{r}$$

ATQ,

$$\Rightarrow \frac{3x+1}{x^3} = \frac{D}{P}$$

$$\Rightarrow \frac{3x+1}{x^3} = \frac{1500}{30720}$$

$$\Rightarrow \frac{3x+1}{x^3} = \frac{25}{512}$$

$$\Rightarrow \frac{3x+1}{x^3} = \frac{8\times3+1}{8^3}$$

$\Rightarrow x = 8$

$$\Rightarrow r = \frac{100}{8}\% = 12.5\%$$

$\therefore$ Required rate = 12.5%

60. (c) Let the share of Amar & Akbar be P_1 & P_2
$\Rightarrow P_1 + P_2 = 3903$
ATQ,

$$P_1\left(1+\frac{R}{100}\right)^{n_1} = P_2\left(1+\frac{R}{100}\right)^{n_2}$$

$$\Rightarrow P_1\left(1+\frac{4}{100}\right)^{7} = P_2\left(1+\frac{4}{100}\right)^{9}$$

$$\Rightarrow \frac{P_1}{P_2} = \left(1+\frac{4}{100}\right)^{9-7}$$

$$\Rightarrow \frac{P_1}{P_2} = \left(\frac{26}{25}\right)^2 = \frac{676}{625}$$

Now, $P_1 : P_2 = 676 : 625$
& $P_1 + P_2 = 3903$

$$\Rightarrow P_1 = ₹3903 \times \frac{676}{676+625}$$

$\Rightarrow P_1 = ₹2028$

$\therefore$ Share of Amar = ₹2028

61. (c) Let l, b and h be the side of cuboid.
ATQ,
$l^2 + b^2 = x^2$ .....(1)
$b^2 + h^2 = y^2$ .....(2)
$b^2 + l^2 = z^2$ .....(3)
adding above equations
$2(l^2 + b^2 + h^2) = x^2 + y^2 + z^2$

$l^2 + b^2 + h^2 = \frac{1}{2}(x^2 + y^2 + z^2)$

.....(4)

from equation (1), (2), (3) & (4)

$h = \frac{\sqrt{y^2 + z^2 - x^2}}{2}$, $l = \frac{\sqrt{z^2 + x^2 - y^2}}{2}$,

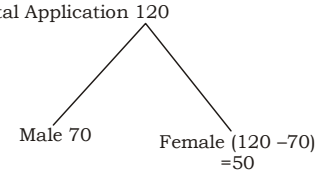
$b = \frac{\sqrt{x^2 + y^2 - z^2}}{2}$

$\therefore$ Volume of cuboid = lbh

$= \sqrt{\frac{(y^2 + z^2 - x^2)(z^2 + x^2 - y^2)(x^2 + y^2 - z^2)}{2 \times 2 \times 2}}$

$= \frac{1}{2\sqrt{2}} \left(\sqrt{(y^2 + z^2 - x^2)(z^2 + x^2 - y^2)(x^2 + y^2 - z^2)}\right)$

62.(c) Total Application 120



Case. A: When all males have driver's license

$M_D = 70$, $F_D = (80 - 70) = 10$

Case. B: When all females are driver'slicense

$M_D = (80 - 50) = 30$, $F_D = 50$

$\therefore$ Required ratio = 30 : 70 = 3 : 7

63.(b) $\frac{(243)^{n/5} \cdot 3^{2n+1}}{9^n \cdot 3^{n-1}}$

$= \frac{(3^5)^{n/5} \cdot 3^{2n+1}}{3^{2n} \cdot 3^{n-1}}$

$= \frac{(3)^{\frac{n}{5} \times 5} \cdot 3^{2n+1}}{3^{3n-1}}$

$= \frac{3^n \cdot 3^{2n+1}}{3^{3n-1}} = \frac{3^{3n+1}}{3^{3n-1}}$

$= 3^{3n+1-3n+1}$

$= 3^2 = 9$

64. (a) $2^{2x+3y} \times 3^{2(3x-y)} = 20736$

$\Rightarrow 2^{2x+3y} \times 3^{2(3x-y)} = 256 \times 81$

$\Rightarrow 2^{(2x+3y)} \times 3^{2(3x-y)} = 2^8 \times 3^4$

comparing powers

$2^{2x+3y} = 2^8 \Rightarrow 2x + 3y = 8$.....(i)

$3^{2(3x-y)} = 3^4 \Rightarrow 3x - y = 2$.....(ii)

Now, $2^{3x+2y} = 128$

$\Rightarrow 2^{3x+2y} = 2^7$

$\Rightarrow 3x + 2y = 7$.....(iii)

Now we get three equation

$2x + 3y = 8$.....(i)

$3x + y = 2$.....(ii)

$3x + 2y = 7$.....(iii)

Solving equation (i) & (iii), we get

$x = 1$ & $y = 2$

As equation (ii) does not satisfies

at $x = 1$ & $y = 2$

$\therefore$ These three equation has no. solution.

65. (c) $x^2 - bx + c = 0$

Roots of equation =

$= \frac{+b \pm \sqrt{b^2 - 4c}}{2}$

$\alpha = \frac{+b + \sqrt{b^2 - 4c}}{2}$

$\beta = \frac{b - \sqrt{b^2 - 4C}}{2}$

ATQ,

$\alpha - \beta = 1$

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

$\Rightarrow \frac{2\sqrt{b^2 - 4C}}{2} = 1$

$\Rightarrow b^2 - 4c = 1$

$\Rightarrow b^2 = (1 + 4c)$

$\Rightarrow b^4 = 1 + 16c^2 + 8c$

$\Rightarrow 16c^2 + 8c - b^4 + 1 = 0$

$\Rightarrow 16c^2 - b^4 + 8c + 1 = 0$

66. (b) $x = 127 + 48\sqrt{7}$

$\Rightarrow x = 64 + 63 + 2 \times 8\sqrt{7 \times 9}$

$\Rightarrow x = 8^2 + \left(\sqrt{63}\right)^2 + 2 \times 8 \times \sqrt{63}$

$\Rightarrow x = \left(8 + \sqrt{63}\right)^2$

$\Rightarrow \sqrt{x} = \left(8 + \sqrt{63}\right)$

$\Rightarrow \frac{1}{\sqrt{x}} = \frac{1}{8 + \sqrt{63}}$

$\Rightarrow \frac{1}{\sqrt{x}} = \frac{\left(8 - \sqrt{63}\right)}{\left(8 + \sqrt{63}\right)\left(8 - \sqrt{63}\right)} =$

$8 - \sqrt{63}$

$\Rightarrow \sqrt{x} + \frac{1}{\sqrt{x}} = 8 + \sqrt{63} + 8 - \sqrt{63} = 16$

$\Rightarrow \sqrt{\left(\sqrt{x} + \frac{1}{\sqrt{x}}\right)} = \sqrt{16}$

$\therefore \sqrt{\left(\sqrt{x} + \frac{1}{\sqrt{x}}\right)} = 4$

67. (d) (126! – 125!)

$= 125!\,(126 - 1)$

$= 125! \times 125$

Number of zeros in 125!

$= \left[\frac{125}{5}\right] + \left[\frac{125}{5^2}\right] + \left[\frac{125}{5^3}\right]$

$= 25 + 5 + 1 = 31$

As,

$125 = 5^3$

Three five will contribute 3 more zeros.

$\therefore$ Total number of zeros = 31 + 3 = 34

68. (a) Let the cost of shirt be ₹ x

Total he received after 1 year = $90 + x$

$\Rightarrow$ Total he received per month = $\left(\frac{90 + x}{12}\right)$

$\Rightarrow$ His 9 months income = $\left(\frac{90 + x}{12}\right) \times 9$

$= \frac{3}{4}(90 + x)$

ATQ,

$\Rightarrow \frac{3}{4}(90 + x) = 65 + x$

$\Rightarrow 270 + 3x = 65 \times 4 + 4x$

$\Rightarrow 270 - 260 = 4x - 3x = x$

$\Rightarrow x =$ ₹ 10

69. (d) $a = c^z$

$\Rightarrow a = (b^y)^z$

$\Rightarrow a = b^{yz}$

$\Rightarrow a = (a^x)^{yz}$

$\Rightarrow a^1 = a^{xyz}$

$\Rightarrow xyz = 1$

$\Rightarrow x = \frac{1}{yz}$

$\Rightarrow \left(x-\frac{1}{yz}\right)=0$

$\Rightarrow \left(x-\frac{1}{yz}\right)^2 = x^2+\frac{1}{(yz)^2}-\frac{2x}{yz}=0$

$\therefore x^2+\frac{1}{yz}\left(\frac{1}{yz}-2x\right)=0$

70. (b) Let the number be $30x$ & $30y$
Where x & y are coprime
ATQ,
$30x \times 30y = 3600$
$\Rightarrow x \times y = \frac{3600}{30\times 30}$
$\Rightarrow x \times y = 4$
$\Rightarrow x \times y = 2^2$
$\therefore$ Number of possible x,y pairs (coprime)
$= 2^{1-1} = 2^0 = 1$
$\therefore$ Number of possible pair of such number = 1

71. (a) Let all the word flashed together at
t = 0sec.
Word "Modern" will flashed after
$= \frac{5}{2}+1=\frac{7}{2}$ sec.
Word "Book" will flashed after
$= \frac{17}{4}+1$
$= \frac{21}{4}$ sec.
Word "Store" will flashed after
$= \frac{41}{8}+1$
$= \frac{49}{8}$ sec.
Now, Glowsign board will be completely visible again at
t = LCM $\left[\frac{7}{2},\frac{21}{4},\frac{49}{8}\right]$ sec
$= \frac{\text{LCM}[7,21,49]}{\text{HCF}(2,4,8)}$
$= \frac{147}{2} = 73.5$ sec

72. (a) $792 = 2^3 \times 3^2 \times 11 = 8\times 9\times 11$
S = 7A68G023535928
As, 928 is divisible by 8, S must be divisible by 8.
Now,
Number S must be divisible by 9.
$\Rightarrow$ Sum of digits of S should be divisble by 9.
$\Rightarrow$ Sum of digits = 58 + A + G, divisible by 9.
Number S must also be divisble by 11
$\Rightarrow$ (8 – 2) + (9 –5) + (3 – 5) + (3 – 2) + (0 –G) + (8 – 6)+(A –7) must be divisible by 11.
$\Rightarrow$ 6 + 4 + –2 + 1– G +2 +A – 7, divisible by 11
$\Rightarrow$ 4 – G + A, divisible by 11.
Now,
58 + A + G, divisible by 9
4 – G + A, divisible by 11
$(A+G)_{max}$ = 9+9 = 18
$(A+G)_{min}$ = 0 + 0 = 0
$\Rightarrow 58 \le 58 + A + G \le 58 + 18$
$58 < 58 + A + G \le 76$
Multiple of 9 between 58, 76 is 63, 72
$\Rightarrow$ 58 + A + G = 63 *or* 58 + A + G = 72
$\Rightarrow$ A + G = 5.....(1) *or* A +G = 14.....(2)
Similarly,
4 – G + A = 11 & 4 – G +A = 0
$\Rightarrow$ A – G = 7....(3) & A – G = –4.....(4)
Solving equation (1) & (3)
A = 6, G = –1 [Not possible as digit can not be negative]
Solving equation (2) & (4)
A = 5 , G = 9
Solving equation (1) & (4)
A = $\frac{1}{2}$, G = $4\frac{1}{2}$ [Not possible, as value of digits can not be a fracion]
Solving equation (2) & (3)
A = $2\frac{1}{2}$, B= $\frac{7}{2}$ [Again not possible]
$\therefore$ A = 5

73. (c) Let the number of candidates who appeared in exam = x
Passed candidates = $\frac{3}{4}x$
$\Rightarrow$ Failed candidates = $\frac{1}{4}x$
New Passed candidates = $\frac{3}{4}x$ – 6 & new total candidates = x + 8
$\Rightarrow$ New failed candidates
$= (x+8)-\left(\frac{3}{4}x-6\right)$
ATQ, $\frac{(x+8)-\left(\frac{3}{4}x-6\right)}{\left(\frac{3}{4}x-6\right)}=\frac{1}{1}$
$\Rightarrow (x+8)-\left(\frac{3}{4}x-6\right)=\left(\frac{3}{4}x-6\right)$
$\Rightarrow \frac{3}{2}x - x = 12 + 8$
$\Rightarrow \frac{1}{2}x = 20$
$\Rightarrow x = 40$

74. (b) ATQ,
$\frac{20\times 2+24x+30\times 3}{(2+x+3)} = 25$
$\Rightarrow 40 + 24x + 90 = (5+x)\,25$
$\Rightarrow 130 + 24x = 125 + 25x$
$\Rightarrow 130 - 125 = (25-24)x$
$\Rightarrow x = 5$ kg

75. (d) Let each soldiers eat 1 packet of food daily.
Total packet of food = 1000 × 30
= 30,000 packets
After 10 days remaining packet
= 30,000 – 1000×10
= 20,000 packet
Now,Total number of soldiers = 1000 + 1000 = 2000
$\therefore$ Required number of days = $\frac{20,000}{2000}$ = 10 days

D-ENGLISH COMPREHENSION

76. (d) **Hoodwinked** (धोखा देना) means to deceive or trick someone, usually by pretending or misleading. Similarly, **Deceived** (धोखा देना) refers to being tricked or misled.
Coerced (बलपूर्वक कराना) means to force someone to do something by using threats or pressure
Threatened (धमकी देना) means to state an intention to cause harm or trouble
Misguided (गुमराह करना) means being led in the wrong direction or misled in judgement

77. (d) **Collusion** (षड़यन्त्र) refers to a secret agreement or cooperation, especially for a dishonest or fraudulent purpose
Collision (टकराव) means a violent impact or crash
Collocation (शब्दों का मेल) refers to the habitual placement of a word with another
Colloquy (बातचीत) means a formal or serious discussion

78. (a) **crews** (कर्मचारी दल) refers to the group of people working on the submarine. It fits as the subject performing the action of being unaware of the ship's location.
Cruise (सैर पर जाना) refers to a journey on a ship for pleasure or vacation
Cruse (घड़ा) refers to a small container for liquids.

79. (d) What is the name of the next station?
This sentence uses the definite article "the" appropriately before "next station," which refers to a specific station and the word **"name"** should be preceded by **"the"** because we are referring to a specific name

80. (b) **early in the**
'So' takes Positive Degree (early).
The preposition **"in"** is used to refer to general periods of the day, such as morning, afternoon, and evening and article **"the"** is used because "morning" refers to a specific part of the day.

81. (d) **Active Voice Structure: Subject + Verb + Object**
Pay the electricity bill for the month of April.
Passive Voice Structure: Let + Object + Be + Past Participle (V3)
Let the electricity bill for the month of April be paid.
"let" is used to express that the action should take place, with the focus on the bill being paid.

82. (c) **Impulsive** (बिना सोचे-समझे) means acting without thinking or planning, driven by sudden desires or emotions. Its opposite is **thoughtful** (सोच-समझकर), which refers to acting with careful consideration or reflection.
Angry (गुस्से में) means feeling strong annoyance or displeasure
Unknown (अनजान) means not known or unfamiliar
Worthless (बेकार) means lacking value or importance

83. (d) The correct order is DACB.
d introduces the topic (importance of peace of mind).
a explains qualities associated with peace of mind.
c connects peace of mind to these attributes.
b concludes with its necessity.

84. (a) The correct spelling is **'Colloquial'** which refers to the informal language or conversational style used in everyday speech.
Recommend (सिफारिश करना) is spelled correctly.
Infection (संक्रमण) is spelled correctly.
Occasion (अवसर) is spelled correctly.

85. (c) **Perquisite** (अतिरिक्त लाभ) refers to an additional profit, benefit, or allowance given to someone, especially above their regular salary or income.
Perplexity (उलझन) means a state of confusion or uncertainty
Persecute (तंग करना) means to treat someone cruelly or unfairly
Persevere (साहसपूर्वक करना) means to continue trying despite difficulties

86. (d) The correctly spelled word is **Necessary** (आवश्यक).
Cemetery (स्मशान घाट) is spelled correctly.
Accommodate (ठहराना) is spelled correctly.
Intruder (घुसपैठिया) is spelled correctly.

87. (d) **Fire in their bellies** (कड़ी मेहनत और दृढ़ संकल्प) refers to having a strong determination, passion, or drive to succeed, which fits the context of candidates with strong determination.
Flash in the pan (अचानक आए परिणाम) refers to something that shows promise initially but fails to deliver in the long run.
Raise the roof (शोर मचाना) means to make a lot of noise or create a commotion
Food for thought (सोचने के लिए कुछ) means something that makes you think deeply

88. (d) **Active Voice Structure: Subject + Verb + Object**
They think that the Governor will resign.
Passive Voice Structure: Object + Auxiliary verb (is/ are) + Past Participle (V3) + by + Subject
It is thought that the Governor will resign."

89. (a) The sentence should use **"are their reasons"** because the subject "reasons" is plural, and we need the plural form of the verb "are" to agree with it.
Their (उनका)

90. (b) **Intransigent** (अडिग) means unwilling to change one's views or opinions, showing an uncompromising attitude. The antonym of **intransigent** would be **subservient**, which means willing to obey or be controlled by others, or easily yielding to others' opinions.
Obstinate (ढ़ीट) means stubborn or refusing to change one's opinion
Tenacious (अडिग) means holding on firmly or being persistent
Pertinacious (जिद्दी) means holding firmly to an opinion

91. (d) The pronoun "that" refers to "one," which is singular. Therefore, the sentence should use the singular verb form "has."

92. (b) **August** (प्रसिद्ध) refers to something or someone respected, dignified, or distinguished. Similarly, **"eminent"** also means highly respected or distinguished.
Imminent (नजदीक) means something that is about to happen.
Permanent (स्थायी) means something that lasts forever.
Illicit (अवैध) means something illegal

93. (a) **Half a loaf is better than none** (कुछ नहीं से कुछ अच्छा है) means that it is better to have something, even if it is less than what you want, than to have nothing at all.
A storm in a teacup (एक छोटी सी समस्या को बहुत बड़ा बना देना) means making a small issue seem much bigger than it really is

94. (a) It should be **"Children were prohibited from attending"** instead of **"to attend"**. The verb **"prohibited"** is followed by **"from"** when indicating the action that is not allowed.

95. (b) **No improvement**
The preposition **"of" correctly** follows **"in danger"** to specify what the risk or harm is related to

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

ANSWER KEY

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