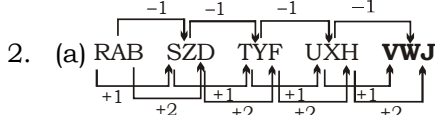
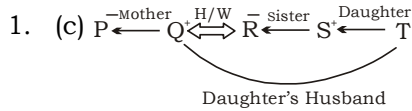
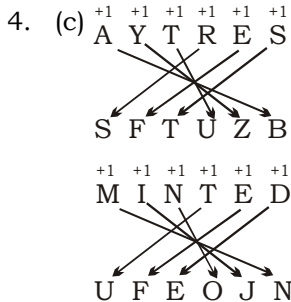


SSC CGL 2025 | SPECIAL MOCK TEST – 21 : SOLUTIONS

A-GENERAL INTELLIGENCE & REASONING



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)

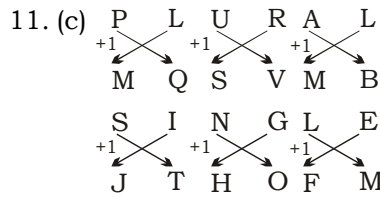


Similarly,

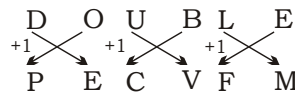


5. (b) $XYZXY / XYZXY / XYZXY / XYZXY$
6. (b)
7. (b) 5, 3, 1, 4, 2
8. (d)
9. (d) (85, 198, 52)
 $\Rightarrow (85 - 52) \times 6$
 $\Rightarrow 33 \times 6 = 198$ (middle term)
 (77, 270, 32)
 $\Rightarrow (77 - 32) \times 6$
 $\Rightarrow 45 \times 6 = 270$ (middle term)
 Similarly,
 $\Rightarrow (62, 90, 47)$
 $\Rightarrow (62 - 47) \times 6 = 15 \times 6 = 90$ (middle term)
10. (d) (12, 8, 16)
 $\Rightarrow (12 - 8)^2 = (4)^2 = 16$ (last term)
 (22, 10, 144)
 $\Rightarrow (22 - 10)^2 = (12)^2 = 144$ (last term)
 Similarly,
 (18, 8, 100)

$$\Rightarrow (18 - 8) = (10)^2 = 100 \text{ (last term)}$$



Similarly,



12. (a)
13. (b)
14. (b)
15. (d) $14 : 85$
 $\Rightarrow 85 = (14 \times 6) + 1$
 $\Rightarrow 85 = 84 + 1$
 $\Rightarrow 85 = 85$
 $20 : 121$
 $\Rightarrow 121 = (20 \times 6) + 1$
 $\Rightarrow 121 = 120 + 1$
 $\Rightarrow 121 = 121$

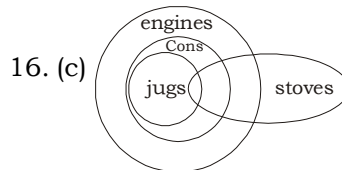
Similarly,

$$11 : x$$

$$x = (11 \times 6) + 1$$

$$x = 66 + 1$$

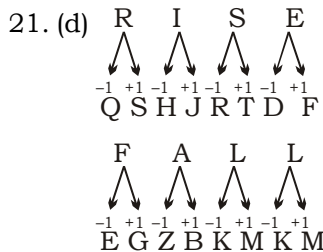
$$x = 67$$



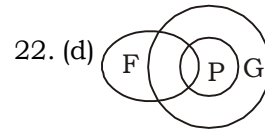
17. (a)
18. (c) $17C \ 12A \ (6B4) \ D8 \ A15 \ D5$
 $17 - 12 + (6 \times 4) \div 8 + 15 \div 5$
 $17 - 12 + 24 \div 8 + 3$
 $23 - 12 = 11$

19. (d)

20. (d)



Similarly,



23. (c) 52, **77**, 113, 162, 226, 307
 $\begin{matrix} +25 & +36 & +49 & +64 & +81 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ (5)^2 & (6)^2 & (7)^2 & (8)^2 & (9)^2 \end{matrix}$
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. (a) Vembanad Lake is the longest lake in India and the largest lake in Kerala, known for its scenic backwaters and houseboat tourism. It spans several districts including Alappuzha, Kottayam, and Ernakulam. / वेम्बनाड झील भारत की सबसे लंबी झील और केरल की सबसे बड़ी झील है, जो अपनी सुंदर बैकवाटर और हाउसबोट पर्यटन के लिए प्रसिद्ध है। यह झील कई जिलों जैसे अलप्पुझा, कोट्टायम और एर्नाकुलम में फैली हुई है।
27. (c) Operation Polo was the code name for the Indian military operation in September 1948 that led to the integration of the Hyderabad princely state into the Indian Union.

ऑपरेशन पोलो वह कोड नाम था, जो सितंबर 1948 में भारतीय सेना द्वारा हैदराबाद रियासत को भारतीय संघ में मिलाने के लिए चलाए गए सैन्य अभियान को दिया गया था।

28. (d) The Reserve Bank of India (RBI) was established on 1st April 1935 under the Reserve Bank of India Act, 1934. It is the central bank of India and controls the issue and supply of the Indian rupee./ भारतीय रिजर्व बैंक (RBI) की स्थापना 1 अप्रैल 1935 को 'भारतीय रिजर्व बैंक अधिनियम, 1934' के अंतर्गत की गई थी। यह भारत का केंद्रीय बैंक है और भारतीय मुद्रा के निर्गम तथा आपूर्ति को नियंत्रित करता है।
29. (d) Polar Easterlies are cold, dry winds that blow from the polar high-pressure areas toward subpolar low-pressure areas. These winds originate near the poles and are known for their extreme coldness and dryness, especially in winter./ ध्रुवीय पूर्वी हवाएँ (Polar Easterlies) ठंडी, शुष्क हवाएँ होती हैं जो ध्रुवीय उच्च दाब क्षेत्रों से उपध्रुवीय निम्न दाब क्षेत्रों की ओर बहती हैं। ये हवाएँ ध्रुवों के पास से उत्पन्न होती हैं और विशेष रूप से सर्दियों में बहुत ठंडी और शुष्क होती हैं।
30. (d) Fundamental Rights in the Indian Constitution aim to safeguard individual liberty, ensure equality, and protect citizens from arbitrary state actions. These rights are essential for establishing political democracy, where every citizen enjoys freedom, equality before law, and protection against discrimination./ भारतीय संविधान में मौलिक अधिकारों का उद्देश्य व्यक्ति की स्वतंत्रता की रक्षा करना, समानता सुनिश्चित करना और नागरिकों को राज्य के मनमाने कृत्यों से सुरक्षा प्रदान करना है। ये अधिकार राजनीतिक लोकतंत्र की स्थापना के लिए आवश्यक हैं।
31. (a) The International Solar Alliance (ISA) has its headquarters at the National

Institute of Solar Energy (NISE) campus in Gwal Pahari, Gurugram Haryana, India./ अंतर्राष्ट्रीय सौर गठबंधन (ISA) का मुख्यालय भारत के हरियाणा राज्य के गुरुग्राम स्थित ग्वाल पहाड़ी में 'राष्ट्रीय सौर ऊर्जा संस्थान' (NISE) परिसर में है।

32. (b) During puberty in boys, the larynx grows larger, and this growth makes the Adam's apple (Kanthamani) more prominent at the front of the throat. It is a visible sign of the voice box enlarging, which also deepens the voice./ लड़कों में किशोरावस्था के दौरान स्वरयंत्र (larynx) बड़ा हो जाता है, जिससे गले के सामने कंठमणि (Adam's Apple) उभर कर दिखने लगती है। यह स्वर पेटी (voice box) के बढ़ने का संकेत होता है, जिससे आवाज भी भारी हो जाती है।
33. (d) Rajkumari Amrit Kaur was India's first woman Union Cabinet Minister. She served as the Health Minister in Jawaharlal Nehru's cabinet from 1947 to 1957. She played a key role in establishing the All India Institute of Medical Sciences (AIIMS) and was a prominent freedom fighter and social reformer./ राजकुमारी अमृत कौर स्वतंत्र भारत की पहली महिला कैबिनेट मंत्री थीं। उन्होंने 1947 से 1957 तक नेहरू मंत्रिमंडल में स्वास्थ्य मंत्री के रूप में कार्य किया। वे एम्स (AIIMS) की स्थापना में महत्वपूर्ण भूमिका निभाने वाली स्वतंत्रता सेनानी और समाज सुधारक थीं।
34. (c) Statement A accurately defines global warming and its human causes. Statement B correctly explains that global warming leads to climate change, resulting in severe impacts such as flooding and extreme weather events./ कथन A

ग्लोबल वार्मिंग और इसके मानवजनित कारणों की सटीक व्याख्या करता है। कथन B यह सही रूप में समझाता है कि ग्लोबल वार्मिंग से जलवायु परिवर्तन होता है, जिससे बाढ़ और चरम मौसम जैसी घटनाएँ होती हैं।

35. (b) Magnetic field lines are continuous loops. Outside a bar magnet, they emerge from the North Pole and enter the South Pole. However, **inside the magnet**, the lines of force travel from the South Pole to the North Pole to complete the loop. This is a fundamental property of magnetic fields./ चुम्बकीय क्षेत्र रेखाएँ एक निरंतर लूप बनाती हैं। बार मैग्नेट के बाहर ये रेखाएँ उत्तरी ध्रुव से निकलती हैं और दक्षिणी ध्रुव में प्रवेश करती हैं। जबकि **चुंबक के अंदर** ये रेखाएँ दक्षिणी ध्रुव से उत्तरी ध्रुव की ओर जाती हैं ताकि लूप पूरा हो सके।
36. (d) The Modern Periodic Table consists of 7 periods (horizontal rows) and 18 groups (vertical columns)./ आधुनिक आवर्त सारणी में 7 आवर्त (पंक्तियाँ) और 18 समूह (स्तंभ) होते हैं।
37. (d) In football, a yellow card is shown by the referee to warn or caution a player for misconduct such as unsporting behaviour, dissent, or delaying the restart of play. A red card is used to send a player off the field for serious offences./ फुटबॉल में पीला कार्ड रेफरी द्वारा खिलाड़ी को चेतावनी देने के लिए दिखाया जाता है जैसे अनुशासनहीन व्यवहार, विरोध, या खेल की देरी। लाल कार्ड गंभीर अपराध के लिए खिलाड़ी को मैदान से बाहर भेजने के लिए होता है।
38. (c) The hypothalamus, a part of the forebrain, contains centres that regulate hunger and satiety (feeling full). The hunger centre and satiety centre in the hypothalamus work together to control food intake based on the body's energy needs.

हाइपोथैलेमस जो कि मस्तिष्क के अग्रभाग का हिस्सा है, भूख और तृप्ति (पेट भरने) को नियंत्रित करने वाले केंद्रों को नियंत्रित करता है। यह शरीर की ऊर्जा आवश्यकताओं के अनुसार भोजन सेवन को नियंत्रित करता है।

39. (d) While public transport is important for convenience and reducing pollution, it is not directly related to an individual's health as much as factors like social equality, public cleanliness, and harmony, which have a more direct impact on mental and physical well-being./ सार्वजनिक परिवहन सुविधा और प्रदूषण को कम करने में मदद करता है, लेकिन यह सीधे स्वास्थ्य से उतना संबंधित नहीं है जितना कि सामाजिक समानता, सार्वजनिक स्वच्छता और सामुदायिक सौहार्द जैसे कारक जो मानसिक और शारीरिक स्वास्थ्य को सीधे प्रभावित करते हैं।

40. (a) Ashvaghosha was a Buddhist philosopher, poet, and dramatist of ancient India. He is best known for writing Buddhacharita, an epic poem in Sanskrit that narrates the life of Gautama Buddha./ अश्वघोष प्राचीन भारत के एक बौद्ध दार्शनिक, कवि और नाटककार थे। वे 'बुद्धचरित' नामक संस्कृत महाकाव्य के लिए प्रसिद्ध हैं, जिसमें गौतम बुद्ध के जीवन का वर्णन है।

41. (d) Anthracite is the highest quality coal because it has the highest carbon content, highest energy content, and least impurities./ एंथ्रासाइट कोयले की सबसे उच्च गुणवत्ता वाली किस्म है क्योंकि इसमें सर्वाधिक कार्बन, सर्वाधिक ऊर्जा और सबसे कम अशुद्धियाँ होती हैं।

42. (c) Kalbaisakhi, also known as Nor 'westers', are pre-monsoon thunderstorms common in the eastern and northeastern parts of India, during April and May. These storms bring strong winds, lightning, and heavy rainfall./ कालबैसाखी, जिन्हें 'नॉर

वेस्टर्स' भी कहा जाता है, भारत के पूर्वी और पूर्वोत्तर हिस्सों में अप्रैल और मई के महीनों में आने वाले ग्री-मानसून तूफान होते हैं। ये तूफान तेज हवा, बिजली और भारी बारिश लाते हैं

43. (d) Capital goods are used in the production of other goods and services. Machines, tools, implements, and buildings are not consumed directly but help in producing consumer goods./ पूंजीगत वस्तुएं वे होती हैं जो अन्य वस्तुओं और सेवाओं के उत्पादन में उपयोग की जाती हैं। मशीनें, उपकरण, औजार और भवन सीधे उपभोग के लिए नहीं होते बल्कि उपभोक्ता वस्तुओं के उत्पादन में सहायक होते हैं।

44. (d) Nitric acid is used in combination with hydrochloric acid to form aqua regia, a powerful solution that can dissolve gold and silver. Aqua regia is commonly used in laboratories and industries for the purification and refining of noble metals like gold and silver./ नाइट्रिक अम्ल को हाइड्रोक्लोरिक अम्ल के साथ मिलाकर एक शक्तिशाली घोल 'एक्वा रेजिया' बनाया जाता है, जो सोना और चाँदी जैसे धातुओं को घोल सकता है। यह प्रयोगशालाओं और उद्योगों में बहुमूल्य धातुओं को शुद्ध करने के लिए उपयोग किया जाता है।

45. (c) Lift systems (elevators) require a large and continuous power supply, which solar cells alone cannot reliably provide due to their limited energy output and dependence on sunlight./ लिफ्ट सिस्टम (elevators) को बड़े और सतत ऊर्जा स्रोत की आवश्यकता होती है, जो केवल सौर ऊर्जा से संभव नहीं है क्योंकि सौर ऊर्जा की आउटपुट सीमित होती है और यह केवल सूर्य की उपस्थिति में उपलब्ध होती है।

46. (c) The 7th edition of the Khelo India Youth Games 2025 was hosted by Bihar from May 4 to May 15, 2025,

marking the first time the state hosted this national multi-sport event./ खेलो इंडिया यूथ गेम्स 2025 का 7वां संस्करण 4 मई से 15 मई 2025 तक बिहार में आयोजित किया गया था। यह पहली बार था जब बिहार ने इस राष्ट्रीय बहु-खेल प्रतियोगिता की मेजबानी की। Chinese scientists have developed the world's first seabed-based radar system capable of detecting high-altitude aircraft. The development of this deep-sea radar system represents a significant advancement in naval warfare technology./ चीनी वैज्ञानिकों ने दुनिया का पहला समुद्र तल आधारित रडार सिस्टम विकसित किया है जो ऊँचाई पर उड़ रहे विमानों का पता लगा सकता है। यह गहरे समुद्र में आधारित रडार प्रणाली नौसैनिक युद्ध तकनीक में एक बड़ा कदम माना जा रहा है।

48. (b) PM Surya Ghar Muft Bijli Yojana provides 300 units of free electricity per month to residential households by installing rooftop solar systems at subsidized rates, empowering citizens to generate their own power./ प्रधानमंत्री सूर्य घर मुफ्त बिजली योजना रियायती दरों पर छत पर सौर प्रणाली स्थापित करके आवासीय घरों को प्रति माह 300 यूनिट मुफ्त बिजली प्रदान करती है, जिससे नागरिकों को अपनी बिजली पैदा करने का अधि कार मिलता है।

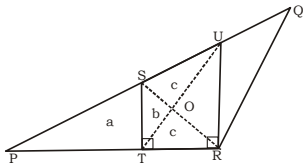
49. (a) Public Examinations (Prevention of Unfair Means) Act, 2024, was enacted by the Indian Parliament to address and deter malpractices in public examinations. The Act aims to uphold the integrity of examinations by penalizing activities such as paper leaks, impersonation, and the use of unauthorized electronic devices during exams.

सार्वजनिक परीक्षा (अनुचित साधनों की रोकथाम) अधिनियम, 2024, सार्वजनिक परीक्षाओं में कदाचार को दूर करने और रोकने के लिए भारतीय संसद द्वारा अधिनियमित किया गया था। इस अधिनियम का उद्देश्य परीक्षा के दौरान पेपर लीक, प्रतिरूपण और अनधिकृत इलेक्ट्रॉनिक उपकरणों के उपयोग जैसी गतिविधियों को दंडित करके परीक्षाओं की अखंडता को बनाए रखना है।

50. (a) Pandit Tejendra Narayan Majumdar is a renowned Indian classical musician and a master of the Sarod. In January 2025, he was honoured with the Padma Shri, in recognition of his significant contributions to Indian classical music./पंडित तेजेंद्र नारायण मजूमदार एक प्रसिद्ध भारतीय शास्त्रीय संगीतकार और सरोद के उस्ताद हैं। जनवरी 2025 में, उन्हें भारतीय शास्त्रीय संगीत में उनके महत्वपूर्ण योगदान के लिए पद्म श्री से सम्मानित किया गया।

C - QUANTITATIVE APTITUDE

51. (c) Area of $\triangle PTU$ = Area of $\triangle PTS$ + Area of $\triangle TUS$
 $ST \parallel UR$



\Rightarrow STRU is trapezium

Area $\triangle SOU$ = Area $\triangle TOR$
 [Area formed by non parallel side are equal]

RS is median of $\triangle PRQ$

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

\therefore Required area = Area of $(\triangle PTS + \triangle TOS + \triangle SOU)$
 = Area of $(\triangle PTS + \triangle TOS + \triangle TOR)$
 = Area of $(\triangle PSR)$
 = 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%

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

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

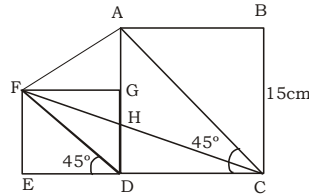
$$\Rightarrow 12.5x - 105 = 13 \times 0.8x$$

$$\Rightarrow 12.5x - 105 = 10.4x$$

$$\Rightarrow 12.5x - 10.4x = 105$$

$$\Rightarrow 2.1x = 105 \Rightarrow x = ₹ 50$$

53. (c)



$FD \parallel AD$ [$\angle FDE = \angle ACD = 45^\circ$]

In Trapezium AFDC, AD and FC are diagonals & AF and DC are non-parallel sides.

Area of $\triangle AFH$ = Area of $\triangle HDC$

[Triangles on non-parallel sides of trapezium]

Now,

Required area = Area of $\triangle FAH$ + Area of $\triangle AHC$

= Area of $\triangle HDC$ + Area of $\triangle AHC$

= Area of $\triangle ADC$

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

[AC is diagonal of square ABCD]

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

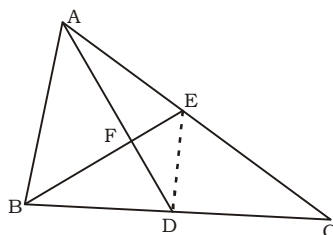
$$= 112.5 \text{ cm}^2$$

54. (d) ATQ,

Area $\triangle BFD$ = Area $\triangle AFE$

\Rightarrow ABDE is a trapezium

$\Rightarrow DE \parallel AB$



Now, $\triangle DCE \sim \triangle BCA$

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

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

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

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

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,

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

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

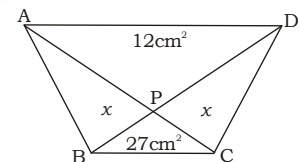
$$\Rightarrow \frac{90}{x} = 3$$

$$\Rightarrow x = 30 \text{ km/hr}$$

$$\Rightarrow \& 2x = 60 \text{ km/hr}$$

\therefore Required speeds = 30km/h, 60km/h

56. (c) Area $\triangle PBP$ = Area $\triangle BPC$



\Rightarrow ABCD is a trapezium

$\Rightarrow AD \parallel BC$

\Rightarrow Area of $\triangle ABP$ = Area of $\triangle DPC = x$

In a trapezium product of opposite triangle's area is same

\Rightarrow Area of $\triangle ABP \times$ Area of $\triangle DPC$ = Area of $\triangle APD \times$ Area of $\triangle BPC$

$$\Rightarrow x \times x = 27 \times 12$$

$$\Rightarrow x^2 = 27 \times 12$$

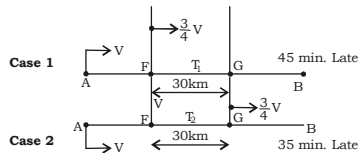
$$\Rightarrow x^2 = 3 \times 3 \times 3 \times 3 \times 2 \times 2$$

$$\Rightarrow x = 3 \times 3 \times 2$$

$$\Rightarrow x = 18 \text{ sq. cm}$$

$$\therefore \text{Required area} = (27 + 18 + 18 + 12) = 75 \text{ cm}^2$$

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,

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

$$\frac{30 \times 4}{3V} - \frac{30}{V} = \frac{10}{60}$$

$$\Rightarrow \frac{30 \times 4}{3V} - \frac{30}{V} = \frac{10}{60}$$

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

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

$$\Rightarrow V = 60 \text{ km/hr}$$

58. (a) Let the length, breadth & height be l , b , h respectively.

ATQ,

$$lb = 72 \dots\dots\dots(1)$$

$$lbh = 720 \dots\dots\dots(2)$$

$$2(lb + bh + hl) = 484$$

$$\Rightarrow (lb + bh + hl) = 242 \dots\dots\dots(3)$$

from equation (1) & (2)

$$h = 10 \text{ cm}$$

Putting $h = 10$ in equation (3)

$$72 + 10b + 10l = 242$$

$$\Rightarrow 10b + 10d = 242 - 72 = 170$$

$$\Rightarrow b + l = 17$$

Now, $bl = 72$

$$b + l = 17$$

$$\Rightarrow l = 9 \quad \& \quad b = 8$$

\therefore Length, breadth, height = 9, 8, 10 cm

59. (a) For $n = 3$ year

Let r be required rate

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

ATQ,

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

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

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

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

$$\Rightarrow x = 8$$

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

\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, $P_1 : P_2 = 676 : 625$

$$\& \quad P_1 + P_2 = 3903$$

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

$$\Rightarrow P_1 = ₹ 2028$$

\therefore Share of Amar = ₹ 2028

61. (c) Let l , b and h be the side of cuboid.

ATQ,

$$l^2 + b^2 = x^2 \dots\dots\dots(1)$$

$$b^2 + h^2 = y^2 \dots\dots\dots(2)$$

$$b^2 + l^2 = z^2 \dots\dots\dots(3)$$

adding above equations

$$2(l^2 + b^2 + h^2) = x^2 + y^2 + z^2$$

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

$$\dots\dots\dots(4)$$

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

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

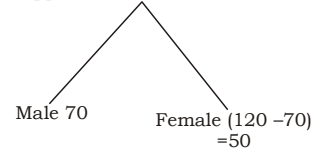
$$b = \frac{\sqrt{x^2 + y^2 - z^2}}{2}$$

\therefore Volume of cuboid = lbh

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

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

62. (c) Total Application 120



Case. A:

When all males have driver's license

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

Case. B: When all females are driver's license

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

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

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

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

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

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

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

$$= 3^2 = 9$$

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

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

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

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

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

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

Now we get three equation

$$2x + 3y = 8 \dots\dots\dots(i)$$

$$3x + y = 2 \dots\dots\dots(ii)$$

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

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

$$x = 1 \quad \& \quad y = 2$$

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) $x = 127 + 48\sqrt{7}$

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

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

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

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

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

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

$$8 - \sqrt{63}$$

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

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

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

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.

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

68. (a) Let the cost of shirt be ₹ x

$$\text{Total he received after 1 year} = 90 + x$$

$$\Rightarrow \text{Total he received per month}$$

$$= \left(\frac{90 + x}{12} \right)$$

$$\Rightarrow \text{His 9 months income} =$$

$$\left(\frac{90 + x}{12} \right) \times 9$$

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

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

$$t = 0 \text{ sec.}$$

Word "Modern" will flashed after

$$= \frac{5}{2} + 1 = \frac{7}{2} \text{ sec.}$$

Word "Book" will flashed after

$$= \frac{17}{4} + 1$$

$$= \frac{21}{4} \text{ sec.}$$

Word "Store" will flashed

$$\text{after} = \frac{41}{8} + 1$$

$$= \frac{49}{8} \text{ sec.}$$

Now, Glowsign board will be completely visible again at

$$t = \text{LCM} \left[\frac{7}{2}, \frac{21}{4}, \frac{49}{8} \right] \text{ sec}$$

$$= \frac{\text{LCM}[7, 21, 49]}{\text{HCF}(2, 4, 8)}$$

$$= \frac{147}{2} = 73.5 \text{ sec}$$

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 divisible by 9.

\Rightarrow Sum of digits = $58 + A + G$, divisible by 9.

Number S must also be divisible by 11

$$\Rightarrow (8 - 2) + (9 - 5) + (3 - 5) + (3 - 2) + (0 - G) + (8 - 6) + (A - 7) \text{ must be divisible by 11.}$$

$$\Rightarrow 6 + 4 - 2 + 1 - G + 2 + A - 7, \text{ divisible by 11}$$

$$\Rightarrow 4 - G + A, \text{ divisible by 11.}$$

Now,

$$58 + A + G, \text{ divisible by 9}$$

$$4 - G + A, \text{ divisible by } 11$$

$$(A+G)_{\max} = 9+9 = 18$$

$$(A+G)_{\min} = 0 + 0 = 0$$

$$\Rightarrow 58 \leq 58 + A + G \leq 58 + 18$$

$$58 < 58 + A + G \leq 76$$

Multiple of 9 between 58, 76 is 63, 72

$$\Rightarrow 58 + A + G = 63 \text{ or } 58 + A + G = 72$$

$$\Rightarrow A + G = 5 \dots (1) \text{ or } A + G = 14 \dots (2)$$

Similarly,

$$4 - G + A = 11 \text{ \& } 4 - G + A = 0$$

$$\Rightarrow A - G = 7 \dots (3) \text{ \& } A - G = -4 \dots (4)$$

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)

$$A = \frac{1}{2}, G = 4\frac{1}{2} \text{ [Not possible,}$$

as value of digits can not be a fraction]

Solving equation (2) & (3)

$$A = 2\frac{1}{2}, B = \frac{7}{2} \text{ [Again}$$

not possible]

$$\therefore A = 5$$

73. (c) Let the number of candidates who appeared in exam = x

$$\text{Passed candidates} = \frac{3}{4}x$$

$$\Rightarrow \text{Failed candidates} = \frac{1}{4}x$$

$$\text{New Passed candidates} = \frac{3}{4}x$$

$$- 6 \text{ \& new total candidates} = x + 8$$

$$\Rightarrow \text{New failed candidates}$$

$$= (x + 8) - \left(\frac{3}{4}x - 6 \right)$$

$$\text{ATQ, } \frac{(x + 8) - \left(\frac{3}{4}x - 6 \right)}{\left(\frac{3}{4}x - 6 \right)} = \frac{1}{1}$$

$$\Rightarrow (x + 8) - \left(\frac{3}{4}x - 6 \right) = \left(\frac{3}{4}x - 6 \right)$$

$$\Rightarrow \frac{3}{2}x - x = 12 + 8$$

$$\Rightarrow \frac{1}{2}x = 20$$

$$\Rightarrow x = 40$$

74. (b) ATQ,

$$\frac{20 \times 2 + 24x + 30 \times 3}{(2 + x + 3)} = 25$$

$$\Rightarrow 40 + 24x + 90 = (5 + x) 25$$

$$\Rightarrow 130 + 24x = 125 + 25x$$

$$\Rightarrow 130 - 125 = (25 - 24)x$$

$$\Rightarrow x = 5 \text{ kg}$$

75. (d) Let each soldiers eat 1 packet of food daily.

$$\text{Total packet of food} = 1000 \times 30$$

$$= 30,000 \text{ packets}$$

$$\text{After 10 days remaining packet}$$

$$= 30,000 - 1000 \times 10$$

$$= 20,000 \text{ packet}$$

$$\text{Now, Total number of soldiers} = 1000 + 1000 = 2000$$

$$\therefore \text{Required number of days} =$$

$$\frac{20,000}{2000} = 10 \text{ days}$$

D-ENGLISH COMPREHENSION

76. (d) **Cumbersome** (भारी-भरकम) means large or heavy and therefore difficult to carry or handle, similar to **Heavy** (भारी), which refers to something with great weight.

Royal (शाही) means relating to a king or queen.

Fickle (चंचल) means changing frequently, especially in mood or opinions.

New (नया) means recently made or discovered.

77. (d) **Glee** (हर्ष) means great delight or joy, similar to **Happiness** (खुशी), which refers to a feeling of pleasure and contentment.

Wickedness (दुष्टता) means evil or morally bad behaviour.

Sorrow (शोक) means deep sadness or grief.

Unhappiness (दुख) refers to the state of not being happy or content.

78. (c) The correct spelling is **Courageously** (साहसपूर्वक)

which means In a brave or fearless manner.

Other correct spellings are :

Categorically (स्पष्ट रूप से) – In a very clear and direct way, without any doubt or conditions.

Charmingly (मोहक ढंग से) – In a delightful, attractive, or pleasing manner.

Concurrently (एक साथ) – Happening at the same time.

79. (d) **Agitated** (व्याकुल) means feeling troubled or disturbed, while

Composed (शांत) means calm and in control emotionally.

Focused (ध्यान केन्द्रित) means directing attention towards something.

Rectified (सुधारा) means corrected or fixed.

Secured (सुरक्षित किया) means made safe or protected.

80. (c) The sentence talks about a past event ("As the news ... reached Einstein"), so the verb should be in the past tense.

81. (d) The subject "one" is singular, so the verb should also be singular: **"that has not"** instead of **"that have not."**

82. (b) **Conciliatory** (सुलहपूर्ण) means having a friendly and calming manner that helps reduce tension or conflict.

- **Confrontational** (टकरावपूर्ण) means aggressive or argumentative.

- **Abrasive** (रूखा) means harsh or rough in manner, likely to cause friction.

- **Indifferent** (उदासीन) means showing no interest or concern

83. (b) **Lick your wounds** means to go away and recover after a defeat or bad experience.

84. (b) Correct order is **ADBC**.

- **A** introduces the idea that child care services can be arranged or requested.
 - **D** states the main point: Ultimately, the parent must give guidance.
 - **B** explains what parents must provide: Love and commitment to their children.
 - **C** concludes by giving the reason: For their proper psychological development.
85. (b) The correct spelling is **Recalcitrant** (अवज्ञाकारी) which means stubbornly resistant to authority or control. Other correct spellings are: **Erudition** (विद्वत्ता) – Extensive knowledge acquired through reading and study. **Compromise** (समझौता) – An agreement reached by mutual concession. **Arrogance** (अहंकार) – An attitude of superiority or self-importance.
86. (b) “**Careful**” is an adjective, but an adverb “**carefully**” is needed here.
87. (d) (1) **vibrant** (जीवंत) means lively, full of energy and excitement. (2) **skyscrapers** (गगनचुंबी इमारतें) are very tall buildings, usually found in big cities. (3) **explore** (खोजना) means to travel around or investigate a place to learn more about it.
88. (c) **To get upper hand** means to gain control or have the strongest position in a situation.
89. (d) **Happy** (खुश) means feeling or showing pleasure and contentment, while **Distraught** (बेहद परेशान) means deeply upset or agitated.

Sour (खट्टा या चिड़चिड़ा) refers to a taste or mood
New (नया) means recently created or discovered.

Curved (मुड़ा हुआ) refers to a shape, not an emotional state.

90. (b) **Whoever** means “the person who” and works as the subject here.

91. (b) **Truculent** (लड़ाकू) is “**Eager or quick to argue or fight; aggressively defiant.**”

Docile (आज्ञाकारी) means obedient and submissive.

Pliable (लचीला) means easily bent or influenced.

Pliant (नरम, लचीला) means flexible or easily influenced.

92. (a) Correct order is **DACB**.

- **D** starts the sentence with the main idea: Not only does this order treat children.

- **A** explains how children are treated: As passive and captive elements who do not have a view.

- **C** continues the idea: Of their own, but it also violates.

- **B** concludes by specifying what is violated: The international convention of child rights.

93. (b) Is she not painting anymore?

Present continuous tense uses “**is/am/are**” + **verb-ing**.

94. (d) Active Voice Structure: **Did (Auxiliary for past question) + he (Subject) + give (Base Verb) + the message (Object)?**

Passive Voice Structure: **Was (Auxiliary for past passive) + the message (Object) + given (V3) + by him (by + Subject)?**

95. (c) **Exodus** (निकास) means a large-scale departure of

people, while **Entry** (प्रवेश) means the act of coming into a place, which is the opposite.

Invasion (आक्रमण) means an aggressive or forceful entry.

Desertion (परित्याग) means abandoning.

Emigration (प्रवास) means leaving one’s country to live in another.

96. (a)

97. (d)

98. (c)

99. (b)

100. (d)

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