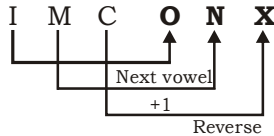
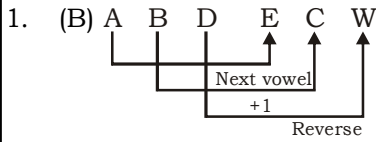


CPO MOCK TEST – 20 (SOLUTION)



2. (C) $6 \Rightarrow \frac{6^2}{2} = \frac{36}{2} = 18$

$4 \Rightarrow \frac{4^2}{2} = \frac{16}{2} = 8$

3. (B) As milk is adulterated by water, in the same way, ghee is adulterated by **Vanaspati**.

4. (B) An oxygen is one of the constituent of water, similarly **sodium** is a constituent of salt.

5. (D)

Word	T	O	M	A
Digit	1	2	3	4

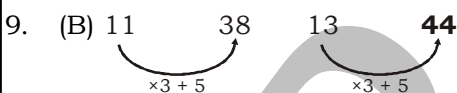
\Rightarrow TOMATO = 123412

Also, MTOOTA = **312214**

6. (D) In Mustard seed is a usable part similarly in carrot **root** is a usable part.

7. (D) **Word Antonyms**
Always Never
Often Rarely

8. (A) Wastes are kept in a dustbin whereas books are stacked in a **rack**.



10. (D)

R	O	C	K	C	R	O	K
1	2	3	4	3	1	2	4
W	H	A	T	A	W	H	T
1	2	3	4	3	1	2	4



12. (B) $263 \Rightarrow 2 \times 3 = 6$ $331 \Rightarrow 3 \times 1 = 3$
 $383 \Rightarrow 3 \times 3 \neq 8$ $551 \Rightarrow 5 \times 1 = 5$

13. (D) All except **Guhawati** are capitals of states of India.

14. (D) Except **247**, others are multiple of 17.

15. (B) In all other pairs, second denotes the class to which the first belong.

16. (D) All except **Identification** are synonyms.

17. (C) All except **Chanakya** were the great mathematicians whereas Chanakya was an economist.

18. (C) In all other pairs, second is the head of the first.

19. (B) Let the present age of B = x yrs
then, present age of A = $3x$ yrs
4 yrs later, A's age = 31 yrs (given)
 $\Rightarrow 3x + 4 = 31$

$\Rightarrow x = \frac{31-4}{3} = \frac{27}{3} = 9$ yrs

So, B's present age = 9 yrs

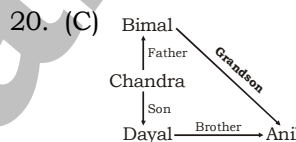
then, A's present age = $9 \times 3 = 27$ yrs

4 year ago A's age = $27 - 4 = 23$ yrs

4 year ago C's age = $2 \times 23 = 46$ yrs

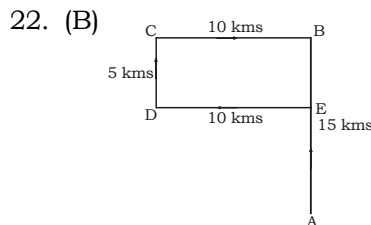
Present age of C = $46 + 4 = 50$ yrs

So, present age of B and C are 9 years and 50 years respectively.



21. (C) The letters at the odd positions are moved two steps backward and the letters at even positions are moved two steps forward to get the result.

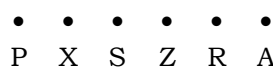
So, PAROLE will be NCPQJG



Finally, he is to the **North** of his house.

23. (C) The symbols adjacent to the face with symbol '*' are @, -, + and \$. Hence, the symbol opposite to '*' is **8**.

24. (B) The sitting arrangement is as follows:



Therefore, right of P is **X**.

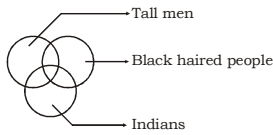
Campus
KD Campus Pvt. Ltd

2007, OUTRAM LINES, 1ST FLOOR, OPPOSITE MUKHERJEE NAGAR POLICE STATION, DELHI-110009

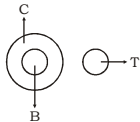
25. (D)



26. (A)

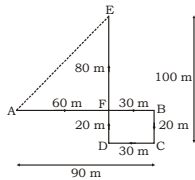


27. (A)



Only conclusion (I) follows.

28. (C)



$$\text{Required distance} = \sqrt{60^2 + 80^2}$$

$$= \sqrt{3600 + 6400} = \sqrt{10000} = \mathbf{100 \text{ m}}$$

So, from starting point his father was 100 metre away.

29. (D) The colour of milk is 'white'. But, as given, 'green' means 'white'. So, the colour of milk is **green**.

30. (C) The order from the oldest to the youngest would be Vani - Sita - **Rani** - Mary - Nita.

(Middle)

31. (D) Series has following pattern

$$3 \times 1^2, 3 \times 2^2, 3 \times 3^2 \text{ and so on}$$

$$\text{Next term will be } 3 \times 7^2 = \mathbf{147}$$

32. (C) Pattern is +2, +2, +4, +4, .., .., +16, +16

$$\text{Missing number will be } 18+8 = \mathbf{26}$$

33. (C) Pattern is $\times 2, \times 3, \times 4$

So, next number in the series will be $\times 5$

$$24 \times 5 = \mathbf{120}$$

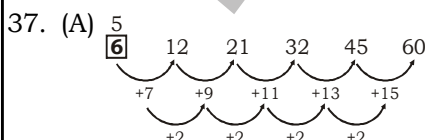
34. (B) Pattern in the series is, +20.5, +22.5,

Next term will be +24.5 and so on.

$$\Rightarrow 138 + 24.5 = \mathbf{162.5}$$

35. (B)

36. (C) Animesh is 22nd from left or twelfth from right (old position of Aman). So there are 21 boys to his left and 11 boys to his right. Thus including Animesh there are **33** boys in the row.



$$79 - (38 + 4) = 37$$

$$\text{Therefore, } 67 - (16 + ?) = 42$$

$$\Rightarrow ? = \mathbf{9}$$

39. (B) Putting the position of the letters in reverse order

$$P = 11, S = 8, V = 5 \text{ and } Y = \mathbf{2}.$$

40. (D) $1 + \left(\frac{1}{2}\right) = \frac{3}{2}$

$$2 + \left(\frac{2}{3}\right) = \frac{8}{3}$$

$$3 + ? = \frac{19}{5}$$

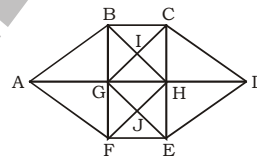
$$\Rightarrow ? = \left(\frac{19}{5}\right) - 3 \Rightarrow ? = \left(\frac{\mathbf{4}}{\mathbf{5}}\right)$$

41. (A) $(15 - 12) + (10 - 9) = 3 + 1 = 4$

$$(28 - 12) + (16 - 20) = 16 + (-4) = 12$$

$$\text{Similarly, } (23 - 11) + (15 - 16) = 12 + (-1) = \mathbf{11}.$$

42. (C) The figure may be labelled as shown.



Simple triangles are ABG, BIG, BIC, CIH, GIH, CDH, HED, GHJ, HJE, FEJ, GFJ and AGF i.e. 12 in number.

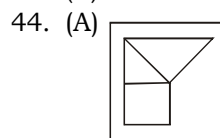
Triangles composed of two components are ABF, CDE, GBC, BCH, GHG, BHG, GHF, GHE, HEF and GEF i.e. 10 in number.

Triangles composed of three components are ABH, AFH, CDG and GDE i.e. 4 in number.

Triangles composed of four components are BHF and CGE i.e. 2 in number.

Total number of triangles in the figure = $12 + 10 + 4 + 2 = \mathbf{28}$.

43. (B)



45. (C)

46. (D)

47. (D)

48. (C)

Front Face	-	×	\$
Opposite Face	?	÷	+

Only cube (4) can be formed.

49. (B) $3649 \Rightarrow \sqrt{36} + \sqrt{49} = 13$
 $\Rightarrow 13^2 + 13 = 169 + 13 = 182$
 and $6481 \Rightarrow \sqrt{64} + \sqrt{81} = 17$
 $\Rightarrow 17^2 + 17 = 289 + 17 = 306$
 so, $2516 \Rightarrow \sqrt{25} + \sqrt{16} = 9$
 $\Rightarrow 9^2 + 9 = 81 + 9 = 90$
50. (B)
52. (B) One barrel of oil contains 159 liters. One metric ton of oil corresponds to around 7.5 barrels on average, depending upon the density of the petroleum or its by-product. One cubic meter of oil is equal to 6.29 barrels.
54. (D) A monolithic statue of Bahubali referred to as "Gommateshvara" built by Chamundaraya ministers and commander of the Ganga dynasty is a 60 feet (18 m) monolith and is situated above a hill in Shravanabelagola, in the Hassan district of Karnataka. It was built in the 10th century AD.
55. (C) Preamble of Indian Constitution declares India as a SOVEREIGN, SOCIALIST, SECULAR and DEMOCRATIC REPUBLIC. The words Socialist, Secular, and Integrity were not in the original constitution and have been inserted by the 42nd amendment act 1976.
56. (C) NRSC is situated at Hyderabad. It has been converted into a full-fledged centres of ISRO since September 1st, 2008. Earlier, NRSC was an autonomous body called National Remote Sensing Agency (NRSA) under Department of Space (DOS). The Centre is responsible for remote sensing satellite data acquisition and processing, data dissemination, aerial remote sensing and decision support for disaster management.
60. (A) The second largest tropical rain forest is found in the Congo Basin in Africa. There are five major tropical rain forest regions in the world: Central America, the Amazon Basin, Africa, Southern Asia and Australia.
61. (C) The book 'Nyaya Sutra' has been authored by Gautama. The Nyaya Sutras is a Hindu text, notable for focusing on knowledge and logic, and vedic rituals are not mentioned in this. The first book is structured as a general introduction and table of contents of sixteen categories of knowledge.
62. (B) The University of Calcutta is a public state university located in Kolkata, West Bengal, India established on 24th January 1857. In 1858, Bankim Chandra Chattopadhyay became the first graduate of the university.
63. (B) $2\text{NaHCO}_3 + \text{H}_2\text{SO}_4 \rightarrow 2\text{CO}_2 + \text{Na}_2\text{SO}_4 + 2\text{H}_2\text{O}$
64. (D) Exobiology is the branch of biology that deals with the search for extra terrestrial life and the effects of extra terrestrial surroundings on living organisms. It is also called astrobiology.
65. (A) The International Day for the Elimination of Racial Discrimination is observed every year on March 21. The theme of 2016 is "Challenges and Achievements of the Durban Declaration and Programme of Action".
68. (C) Iceland makes the maximum use of geothermal Energy. About 85 percent of total primary energy supply in Iceland is derived from domestically produced geothermal energy sources. The main use of geothermal energy is for space heating with the heat being distributed to buildings through extensive district-heating systems. About 85% of all houses in Iceland are heated with geothermal energy.
69. (C) The high-level Conference on "International Decade for Action: Water for Sustainable Development, 2018-2028" is hosted by Tajikistan. United Nations and Government of the Republic of Tajikistan have jointly organised the Conference to discuss key water-related issues of sustainable development goals adopted by UN member countries. Union Minister for Water Resources, River Development & Ganga Rejuvenation and Road Transport & Highways and Shipping Shri Nitin Gadkari has attended the conference to represent India.
70. (C) Pepper [kali goal mirch] was one of the most required thing imported by greek trader in ancient India traditon so in sanskrit literature it is named as yavanpriya.
71. (C) Isotope is forms of an element with same atomic number but different mass number. Polonium has maximum number of isotopes i.e 33.
72. (D) Table salt often comes in "iodized" form which means it includes a small amount of potassium iodide or sodium iodide. Iodized salt is intended to supply us with the trace amount we need of the chemical element iodine, which is necessary for the proper functioning of our thyroid gland.
73. (C) Voting right by the youths at the age of 18 years was exercised for the first time in the General Election of 1989.
74. (C) As per article 66, the candidate contesting for election of Vice-President of India should have the following qualifications:
 (I). He must be a citizen of India.
 (II). He must have completed the age of 35 years.
 (III). He cannot hold an office of profit.
 (IV). He must have qualification to become a member of Rajya Sabha.

75. (C) Sikkim became a state of India by the Thirty-sixth Constitution Amendment Act, 1975 on 26th April, 1975. The Sikkim State day is observed on 16th May of every year because this was the day when the first Chief Minister of Sikkim assumed the office.
77. (D) Exercise INDRA is a joint military exercise held between India and Russia. In 2017, the first tri-service is held between these two nations.
78. (C) The Huangpu River, originates at Dianshan Lake, in the Qingpu District of Shanghai, and finally flows into the Yangtze River at Wusong Estuary. Flowing through the hundred-li (31 miles) harbor district of Shanghai, the Huangpu River is the biggest river in Shanghai. The Huangpu River flows through the heart of Shanghai.
80. (D) In 1781, Warren Hastings founded Madarasa 'Alia', it was transformed into Aliah University by the Government of India, in 2007.
83. (A) PM2.5 and ground level Ozone are held responsible for the maximum number of premature mortalities in India. PM2.5 causes respiratory irritation or breathing difficulties or Asthma, and sometimes may prove fatal.
84. (D) On the basis of seven social parameters, Haryana Government has launched '7-Star Gram Panchayat Rainbow Scheme' to give star rankings to its panchayats. The parameters on which Panchayats will be judged are sex ratio, education, hygiene, environment preservation, governance, crime and social participation. The panchayat which will achieve parameters will also be awarded in monetary terms.
85. (C) A judge of the Supreme Court can be removed from his office by an order of the President. The President can issue the removal order after an address by the Parliament, supported by a special majority of each House of Parliament (that is, a majority of the total membership of that House and a majority of not less than two thirds of the members of that house present and voting), has been presented to the President in the same session of Parliament for such a removal.
86. (B) The President can also remove the chairman or any other member of UPSC for misbehaviour. However, in this case, the president has to refer the matter to the Supreme Court for an enquiry. If the Supreme Court, after the enquiry, upholds the cause of removal and advises so, the president can remove the chairman or a member. Under the provisions of the Constitution, the advise tendered by the Supreme Court in this regard is binding on the president. During the course of enquiry by the Supreme Court, the president can suspend the chairman or the member of UPSC.
88. (B) Cycas an ancient group of seed plant first occurred in Pennsylvanian, so have existed for approximately 300 million years ago.
90. (C) The Shanti Swarup Bhatnagar Prize for Science and Technology (SSB) is a scientific award in India given annually by the Council of Scientific and Industrial Research (CSIR) for notable and outstanding research, applied or fundamental, in biology, chemistry, environmental science, engineering, mathematics, medicine and Physics. The purpose of the prize is to recognize outstanding Indian work (according to the view of CSIR awarding committee) in science and technology. It is the most coveted award in multidisciplinary science in India.
94. (D) NR Visakh, the Tamil Nadu teenager and International Master, has created history by becoming the first Indian to win the 9th edition of Mumbai Mayor's International Open Chess Tournament 2016.
97. (B) The world's first International Centre for Humanitarian Forensics (ICHF) was launched on 20 June 2018 in Gujarat, India by the Gujarat Forensic Sciences University (GFSU) in collaboration with the International Committee of the Red Cross (ICRC) Regional Delegation for India, Bhutan, Nepal and the Maldives. ICHF is the first definitive effort at institutionalising humanitarian forensic action within an existing university system. The Centre will conduct various academic and professional programmes, training & research and provide technical expertise to support operations (together with authorities and agencies concerned) in the field of humanitarian forensics.
99. (C) The executive authority of a state is vested in the Governor; and Governor is the constitutional head of the state in the same way as President is the Constitutional head of the Union.
101. (A) Marks obtained by the boys in Hindi
= (75% of 60) + (65% of 60) + (70% of 60)
= 45 + 39 + 42 = 126
Marks obtained by girls in Hindi
= (65% of 60) + (75% of 60) + (45% of 60)

$$= 27 + 39 + 45 = 111$$

$$\text{Required Difference} = 126 - 111 = 15$$

102. (B) Total marks obtained by Renuka
 $= (90\% \text{ of } 120 + 48\% \text{ of } 75 + 75\% \text{ of } 60 + 68\% \text{ of } 75 + 76\% \text{ of } 150 + 88\% \text{ of } 50)$
 $= 108 + 36 + 45 + 51 + 114 + 44 = 398$

103. (C) Average marks in Economics by all the students

$$= \frac{(92 + 64 + 80 + 52 + 68 + 88)}{6 \times 100} \text{ of } 75$$

$$= \frac{444}{6 \times 100} \times 75 = 55.50$$

104. (B) $x = 8 + 3\sqrt{7}$

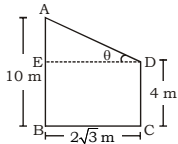
$$\frac{1}{x} = \frac{1}{8 + 3\sqrt{7}} = 8 - 3\sqrt{7}$$

$$x + \frac{1}{x} = 8 + 3\sqrt{7} + 8 - 3\sqrt{7} = 16$$

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

$$= (16)^2 - 2 = 256 - 2 = 254$$

105. (B)

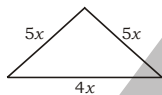


$$\begin{aligned} AE &= AB - ED \\ &= 10 - 4 \\ &= 6 \text{ m} \end{aligned}$$

$$\tan \theta = \frac{AE}{ED}$$

$$\Rightarrow \tan \theta = \frac{6}{2\sqrt{3}} \Rightarrow \tan \theta = \frac{\sqrt{3}}{1} \Rightarrow \theta = 60^\circ$$

106. (D)

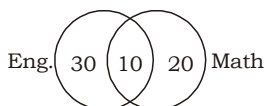


$$\begin{aligned} \text{Lateral side} &: \text{Base} \\ 5x &: 4x \end{aligned}$$

$$\begin{aligned} P &= 10x + 4x = 28 \text{ cm} \\ \Rightarrow 14x &= 28 \Rightarrow x = 2 \end{aligned}$$

$$\begin{aligned} \text{Area of triangle} &= \frac{1}{4} \times 8\sqrt{4 \times 100 - 64} \\ &= 8\sqrt{21} \text{ cm}^2 \end{aligned}$$

107. (B)



$$[(30 + 20) - 10] \times 10\% = 160$$

$$40\% = 160$$

$$100\% = \frac{160}{40} \times 100 = 400$$

$$\text{Total number of students} = 400$$

108. (B) Discount = $300 - 274.50 = ₹ 25.50$

$$\text{Discount \%} = \frac{25.50}{300} \times 100 = 8.5\%$$

109. (A) Distance = $(10 - 2) \times 4 = 32 \text{ km}$

$$\begin{aligned} \text{Required time} &= \frac{32}{10 + 2} = \frac{32}{12} \\ &= 2 \text{ hour } 40 \text{ minutes} \end{aligned}$$

110. (A) Let the price of table be t and chair be c .

$$4t + 5c = 1000 \quad \dots(i)$$

$$4 \times \left(t \times \frac{110}{100}\right) + 5 \times \left(c \times \frac{120}{100}\right) - (4t + 5c) = 120$$

$$\frac{44t}{10} - 4t + \frac{30c}{5} - 5c = 120$$

$$\frac{4t}{10} + c = 120$$

$$4t + 10c = 1200 \quad \dots(ii)$$

$$4t + 5c = 1000 \quad \dots(i)$$

$$\begin{array}{r} - \quad - \quad - \\ 5c = 200 \\ c = ₹ 40 \end{array}$$

$$\therefore t = ₹ 200$$

$$\text{Cost of 1 table} = ₹ 200$$

$$111. (C) \frac{(a-b)^2}{(b-c)(c-a)} + \frac{(b-c)^2}{(a-b)(c-a)} + \frac{(c-a)^2}{(a-b)(b-c)}$$

$$= \frac{(a-b)^3 + (b-c)^3 + (c-a)^3}{(a-b)(b-c)(c-a)}$$

$$\text{since, } (a-b) + (b-c) + (c-a) = 0$$

$$\therefore (a-b)^3 + (b-c)^3 + (c-a)^3 = 3(a-b)(b-c)(c-a)$$

$$= \frac{3(a-b)(b-c)(c-a)}{(a-b)(b-c)(c-a)} = 3$$

$$112. (B) \frac{\cos(90^\circ + A) \cdot \sec(720^\circ - A) \cdot \tan(180^\circ - A)}{\sec(A - 360^\circ) \cdot \sin(540^\circ + A) \cdot \cot(A - 90^\circ)}$$

$$= \frac{(-\sin A) \cdot \sec A \cdot (-\tan A)}{\sec A (-\sin A) (-\tan A)} = 1$$

$$113. (C) l + b + h = a$$

$$\text{and, } \sqrt{l^2 + b^2 + h^2} = \text{diagonal} = b$$

$$(l + b + h)^2 = a^2$$

$$\Rightarrow \underbrace{l^2 + b^2 + h^2}_{b^2} + 2(lb + bh + hl) = a^2$$

$$\Rightarrow 2(lb + bh + hl) = a^2 - b^2$$

$$\therefore \text{surface area} = a^2 - b^2$$

114. (B) Original price of rice per kg

$$= \frac{120}{93.75} \times 100 = ₹ 128$$

∴ Reduce price = ₹ 128 - ₹ 120 = ₹ 8

115. (C) Let their present age be x and y year

$$\frac{x-4}{y-4} = \frac{2}{3}$$

$$3x - 12 = 2y - 8$$

$$3x - 2y = 4 \quad \dots(i)$$

$$\frac{x+4}{y+4} = \frac{5}{7}$$

$$7x + 28 = 5y + 20$$

$$7x - 5y = -8 \quad \dots(ii)$$

From eq. (i) $\times 5$ & eq. (ii) $\times 2$

$$15x - 10y = 20$$

$$14x - 10y = -16$$

$$\begin{array}{r} - \quad + \quad + \\ \hline x = 36 \text{ years} \end{array}$$

And $y = 52$ years

116. (A) Ratio = $\frac{1}{3} : \frac{1}{4} : \frac{1}{12} = 4 : 3 : 1$

$$3 \xrightarrow{\times 22.50} 67.50$$

$$\text{then, } 4 + 3 + 1 \Rightarrow 8 \xrightarrow{\times 22.50} 180$$

So, cost of book = ₹ 180

117. (A) $\sqrt{-\sqrt{3} + \sqrt{3 + 8\sqrt{(2 + \sqrt{3})^2}}}$

$$= \sqrt{-\sqrt{3} + \sqrt{3 + 8(2 + \sqrt{3})}}$$

$$= \sqrt{-\sqrt{3} + \sqrt{3 + 16 + 8\sqrt{3}}}$$

$$= \sqrt{-\sqrt{3} + \sqrt{19 + 8\sqrt{3}}}$$

$$= \sqrt{-\sqrt{3} + \sqrt{(4 + \sqrt{3})^2}} = \sqrt{-\sqrt{3} + (4 + \sqrt{3})}$$

$$= \sqrt{-\sqrt{3} + 4 + \sqrt{3}} = \sqrt{4} = 2$$

118. (A) $AB = \sqrt{(3-1)^2 + (4+2)^2} = 2\sqrt{10}$ units

$$BC = \sqrt{(4-3)^2 + (7-4)^2} = \sqrt{10}$$
 units

$$AC = \sqrt{(4-1)^2 + (7+2)^2} = 3\sqrt{10}$$
 units

$$AB + BC = AC$$

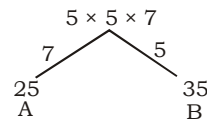
So, A, B and C are points on straight line.

119. (A) Let total population at the beginning of the first year be x .

$$9975 = x \times \frac{105}{100} \times \frac{95}{100}$$

$$x = 10,000$$

120. (D)



Ratio of wages = 7 : 5

$$A = \frac{7}{12} \times 48132 = ₹ 28077$$

121. (C) Principal $\begin{matrix} 50000 & 75000 \\ \swarrow & \searrow \\ \text{2 years} & \text{2 years} \end{matrix}$

Ratio = 50,000 : 75,000

$$= 2 : 3$$

∴ P : IInd year amount must also be in the ratio of 2 : 3.

$$\frac{P}{50000} = \frac{2}{3}$$

$$P = \frac{100000}{3} = ₹ 33333.33$$

122. (C) $x + \frac{1}{x} = \sqrt{3}$

$$\Rightarrow x^6 = -1$$

$$= x^{84} + x^{78} + x^{72} + x^{66} + x^{48} - x^{42} + 1$$

$$= (x^6)^{14} + (x^6)^{13} + (x^6)^{12} + (x^6)^{11} + (x^6)^8 - (x^6)^7 + 1$$

$$= (-1)^{14} + (-1)^{13} + (-1)^{12} + (-1)^{11} + (-1)^8 - (-1)^7 + 1$$

$$= 1 - 1 + 1 - 1 + 1 + 1 + 1$$

$$= 5 - 2$$

$$= 3$$

123. (D) $\tan(A - 38) \times \tan(2A + 23) = 1$

$$\left[\begin{array}{l} \because A + B = 90^\circ \\ \therefore \tan A \times \tan B = 1 \end{array} \right]$$

$$\therefore A - 38 + 2A + 23 = 90^\circ$$

$$\Rightarrow 3A - 15 = 90^\circ$$

$$\Rightarrow 3A = 105^\circ$$

$$A = 35^\circ$$

124. (C) Side = 10

$$\text{Area} = 100$$

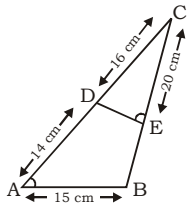
$$\downarrow 224\%$$

$$324$$

$$\therefore \text{New side} = \sqrt{324} = 18$$

$$\% \text{ increase} = \frac{8}{10} \times 100 = 80\%$$

125. (D)



$\angle A = \angle CED$
 $\angle C$ common
 $\therefore \triangle ABC \cong \triangle EDC$

$$\therefore \frac{AB}{DE} = \frac{AC}{EC}$$

$$\Rightarrow \frac{15}{DE} = \frac{14+16}{20} \Rightarrow DE = 10 \text{ cm}$$

126. (A)

	Article		Price
CP	22	→	1 = 25 (25×1)
SP	25	←	3 = 66 (22×3)

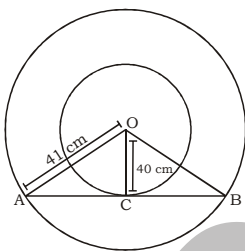
$$\text{Profit \%} = \frac{66 - 25}{25} \times 100 = \frac{41}{25} \times 100 = 164 \%$$

127. (D) $\frac{7 \times 12}{1} = \frac{8 \times M_2}{2}$

$$M_2 = 21$$

$$\text{Number of additional men} = 21 - 7 = 14$$

128. (C)



$$\therefore AC = \sqrt{41^2 - 40^2} = \sqrt{81} = 9 \text{ cm}$$

$$\therefore \text{Chord AB} = 2 \times 9 = 18 \text{ cm}$$

129. (B) Let the number of solid spheres be n

$$n \times \frac{4}{3} \pi \times (6)^3 = \pi r^2 h$$

$$\Rightarrow n \times \frac{4}{3} \pi \times 216 = \pi \times (4)^2 \times 90$$

$$\Rightarrow n \times 4 \times 72 = 16 \times 90$$

$$\Rightarrow n = 5$$

130. (A) $A = 30^\circ$

$$3 \sec A - 2 \cos B = \sqrt{3}$$

$$\Rightarrow 3 \times \sec 30^\circ - 2 \cos B = \sqrt{3}$$

$$\Rightarrow 3 \times \frac{2}{\sqrt{3}} - 2 \cos B = \sqrt{3}$$

$$\Rightarrow 2 \cos B = 2\sqrt{3} - \sqrt{3}$$

$$\Rightarrow 2 \cos B = \sqrt{3}$$

$$\Rightarrow \cos B = \frac{\sqrt{3}}{2}$$

$$\Rightarrow B = 30^\circ$$

$$\cos(A - B) = \cos(30 - 30) = \cos 0^\circ = 1$$

131. (B) $x = 1 + \frac{2}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{3}}}}$

$$= 1 + \frac{2}{1 + \frac{1}{1 + \frac{3}{4}}}$$

$$= 1 + \frac{2}{1 + \frac{4}{7}} = 1 + \frac{14}{11} = \frac{25}{11}$$

$$\therefore 11x - 12 = 11 \times \frac{25}{11} - 12 = 13$$

132. (B) Length = 8 m

Breadth	:	Height
$2x$:	x

$$\text{Area of 4 walls} = 2(8 \times x + 2x \times x) = 84 \times 1 \text{ m}^2$$

$$\Rightarrow 8x + 2x^2 = 42$$

$$\Rightarrow x^2 + 4x = 21$$

$$\Rightarrow x^2 + 7x - 3x - 21 = 0$$

$$\Rightarrow (x + 7)(x - 3) = 0$$

$$\therefore x = 3$$

(ignore -ve of $x = -7$)

$$\therefore \text{Area of floor} = l \times b$$

$$= 8 \times 2x$$

$$= 8 \times 6 \text{ m}^2$$

$$= 48 \text{ m}^2$$

133. (A) $a + b = 4, b + c = 3, c + a = 7$

$$\therefore a + b + c = \frac{1}{2}(4 + 3 + 7) = 7$$

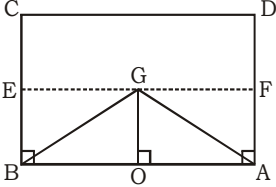
$$(a + b + c)^3 = a^3 + b^3 + c^3 + 3(a + b)(b + c)(c + a)$$

$$\Rightarrow (7)^3 = a^3 + b^3 + c^3 + 3 \times 4 \times 3 \times 7$$

$$\Rightarrow a^3 + b^3 + c^3 = 343 - 252$$

$$\Rightarrow a^3 + b^3 + c^3 = 91$$

134. (B) $\sin^2 \alpha + \sin^2 \beta = 2$
 $\Rightarrow \sin^2 \alpha = \sin^2 \beta = 1$
 $\sin \alpha = \sin \beta = 1$
 $\alpha = \beta = 90^\circ$
 $\sin\left(\frac{90^\circ + 90^\circ}{2}\right) = \sin 90^\circ = 1$

135. (B) 

$$\Delta GAB = \frac{1}{2} \times OB \times OG + \frac{1}{2} \times OA \times OG$$

$$= \frac{1}{2} OG (OA + OB)$$

$$= \frac{1}{2} \times OG \times AB = \frac{1}{2} (BE \times AB)$$

$$= \frac{1}{2} (\text{Rectangle BEFA})$$

$$= \frac{1}{2} \left(\frac{1}{2} \text{ Rectangle ABCD}\right)$$

(\because E & F are midpoint of BC & AD)

$$= \frac{1}{4} (\text{Rectangle ABCD})$$

136. (B) Ratio of internal angle to its exterior angle of regular polygon = 4 : 1

$$\Rightarrow \frac{(n-2) \times \frac{180}{n}}{\frac{360}{n}} = \frac{4}{1}$$

$$\Rightarrow \frac{180(n-2)}{360} = \frac{4}{1}$$

$$\Rightarrow n-2 = 8$$

$$\Rightarrow n = 10$$

\therefore Number of sides = 10

137. (C) $A = P \left(1 + \frac{r}{100}\right)^n$

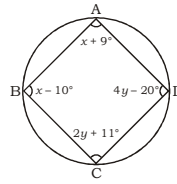
$$2P = P \left(1 + \frac{r}{100}\right)^6$$

$$2 = \left(1 + \frac{r}{100}\right)^6$$

$$(2)^3 = 8 = \left(1 + \frac{r}{100}\right)^{6 \times 3}$$

i.e., $n = 18$ years

138. (A)



Cyclic quadrilateral

$$\therefore x + 9^\circ + 2y + 11^\circ = 180^\circ$$

$$\Rightarrow x + 2y = 160^\circ \quad \dots(i)$$

$$x - 10^\circ + 4y - 20^\circ = 180^\circ$$

$$x + 4y = 210^\circ \quad \dots(ii)$$

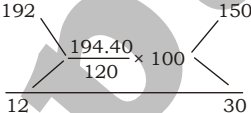
Subtracting equation (i) from (ii)

$$2y = 50^\circ \Rightarrow y = 25^\circ$$

$$\therefore x + 50^\circ = 160^\circ \text{ (In equation (i))}$$

$$\Rightarrow x = 110^\circ$$

$$\therefore x + y = 110^\circ + 25^\circ = 135^\circ$$

139. (B) 

$$\text{Required ratio} = 12 : 30$$

$$= 2 : 5$$

140. (B) Discount = $32 \times \frac{25}{100} = ₹ 8$

₹ 8 discount on 1 shirt

So, number of shirt = $\frac{40}{8} = 5$

141. (B) Oil taken out = $\frac{3}{4} - \frac{1}{2} = \frac{3-2}{4} = \frac{1}{4}$ part

$$\frac{1}{4} \text{ part} = 48 \text{ litres}$$

$$1 \text{ part} = 48 \times 4 = 192 \text{ litres}$$

142. (B) Ashu : Lucky : Priti

$$= 12 \times 2000 : 4 \times 2500 : 8 \times 1500$$

Share of Ashu : Lucky : Priti

$$= 12 : 5 : 6 \Rightarrow 23 \times 100 \rightarrow 2300$$

$$\text{Priti's share} = 6 \times 100 = ₹ 600$$

143. (B) Annual payment = $\frac{100P}{100T + \frac{RT(T-1)}{2}}$

$$= \frac{100 \times 848}{100 \times 8 + \frac{8 \times 8(7)}{2}} = \frac{84800}{800 + 32 \times 7}$$

$$= \frac{84800}{1024} = ₹ 82.8125$$

144. (D) Total number of vote = $1136 + 7636 + 11628$
 $= 20400$

Required percentage = $\frac{11628}{20400} \times 100$
 $= 57\%$

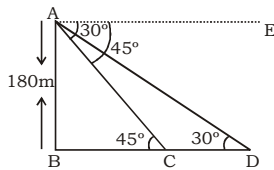
145. (B) Let number of boys = B and Girls = G
 $B = G - 2$

$\therefore B + G = 52$
 $\therefore G - 2 + G = 52 \quad [\because B = G - 2]$
 $G = 27, B = 25$

Total weight = $52 \times 52 = 2704$ kg
 Total weight of boys = $25 \times 60 = 1500$ kg
 Total weight of girls = $2704 - 1500$
 $= 1204$ kg

\therefore Average weight of girls = $\frac{1204}{27} = 44.59$ kg

146. (B)



Let AB be the tower.

$\angle EAD = \angle ADB$ [Alternate angle]
 $\angle EAC = \angle ACB$ [Alternate angle]

$\tan 45^\circ = \frac{AB}{BC}$

$\Rightarrow 1 = \frac{180}{BC}$

$\Rightarrow BC = 180$ m

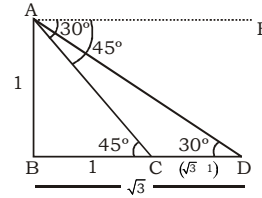
$\Rightarrow \tan 30^\circ = \frac{AB}{BD}$

$\Rightarrow \frac{1}{\sqrt{3}} = \frac{180}{180 + CD}$

$\Rightarrow 180 + CD = 180\sqrt{3}$

$\therefore CD = 180(\sqrt{3} - 1)$ m

Short tricks:-



Let AB be height of tower.

AB = 180 m (given)

$\therefore CD = 180(\sqrt{3} - 1)$ m

[\because Distance CD = height (cot $\theta_2 - \cot \theta_1$)]

147. (C) Let total income of Prakash be ₹ x.

saving = $x \times \frac{75}{100} \times \frac{80}{100} \times \frac{60}{100}$

$8640 = x \times \frac{75}{100} \times \frac{80}{100} \times \frac{60}{100}$

$x = ₹ 24000$

148. (B) Required % = $\frac{(70 - 64)}{70} \times 100$

$= \frac{60}{7} = 8\frac{4}{7}\%$

149. (C) Average production

$= \frac{(70 + 64 + 45 + 60 + 60 + 73)}{6} = \frac{372}{6}$

$= 62$

Maximum production = 73

Required ratio = 73 : 62

150. (B)

151. (C) We need on adverb here i.e, 'satisfactorily' which qualifies the verb 'score' in the sentence (it means you score satisfactorily).

152. (C) Replace 'most' by 'much' or 'the most'.

153. (B) Replace 'tell' by 'speak', as 'speak' is often used for one-way communications and does not need an object.

154. (C) Replace 'great' by 'big'.

155. (C) Add 'watch' after 'going out to'.

156. (B) We agree to do something.

158. (D) 'insist' always takes 'on' after it. 'We insist on something/doing something'.

159. (B) 'Had better' is used to give advice about specific situations. 'Had better' is followed by 'bare infinitive'

160. (A) 'than' needs a comparative degree.

MEANINGS IN ALPHABETICAL ORDER

Word	Meaning in English	Meaning in Hindi
Agoraphobia	A fear of being in public places where there are many other people.	भीड़ से डर
Auspicious	showing signs that something is likely to be successful in the future	शुभ, मंगल
Bespectacled	(of a person) wearing eyeglasses	चश्मा पहने हुए
Bewildered	confused	हक्का-बक्का
Clumsy	moving or doing things in a very awkward way	बेढंगा
Condemnatory	to cause (someone) to suffer or live in difficult or unpleasant conditions	दण्डात्मक
Conspicuous	easy to see or notice; likely to attract attention	प्रत्यक्ष
Deceptive	intended to make someone believe something that is not true	कपटी
Fascist	One who is practising or supporting an authoritarian and nationalistic right-wing system of government and social organization.	तानाशाही का समर्थक
Fatalist	A person who believes that events are decided by fate and cannot be controlled.	भाग्यवादी
Gratify	give (someone) pleasure or satisfaction	सन्तुष्ट करना
Gregarious	liking to be with other people, sociable	मिलनसार
Illusion	a thing that is or is likely to be wrongly perceived or interpreted by the senses	भ्रम
Immaculately	in an extremely clean and tidy way	अत्यंत स्वच्छ और व्यवस्थित ढंग से
Immediate	happening or done without delay	तुरंत
Indifference	a lack of interest, feeling or reaction towards somebody/ something	उदासीनता
Invincible	impossible to defeat or overcome	अपराजेय
Leisurely	done without hurrying	आराम से
Mediocre	of only average standard or not very good	औसत दर्जे का
Momentary	lasting for a very short time	क्षणिक
Placid	calm and peaceful	शांत
Pugnacious	showing a readiness or desire to fight or argue	झगड़ालू
Reconnaissance	the activity of getting information about an area for military purposes, using soldiers, planes, etc	किसी स्थान का सैनिक सर्वेक्षण
Sagacious	showing good judgement and understanding	बुद्धिमान
Sarcastic	Expressing ridicule or using irony in order to mock or convey contempt	व्यंग्यात्मक
Senile	behaving in a confused or strange way, and unable to remember things, because you are old	सठियाना
Subversion	the process of trying to destroy the authority of a political, religious, etc. system by attacking it secretly or indirectly	गुप्त रूप से नष्ट करना
Taste-buds	any of the clusters of bulbous nerve endings on the tongue and in the lining of the mouth that provide the sense of taste	जीभ पर स्थित वह तंत्रिका तंत्र जो स्वाद प्रदान करती है
Variant	slightly different in form or type from something else	प्रकार
Xenophobia	A strong feeling of dislike or fear of people from other countries.	विदेशी लोगों से भय

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CPO MOCK TEST - 20 (ANSWER KEY)

1. (B)	26. (A)	51. (A)	76. (B)	101. (A)	126. (A)	151. (C)	176. (C)
2. (C)	27. (A)	52. (B)	77. (D)	102. (B)	127. (D)	152. (C)	177. (B)
3. (B)	28. (C)	53. (D)	78. (C)	103. (C)	128. (C)	153. (B)	178. (A)
4. (B)	29. (D)	54. (D)	79. (A)	104. (B)	129. (B)	154. (C)	179. (D)
5. (D)	30. (C)	55. (C)	80. (D)	105. (B)	130. (A)	155. (C)	180. (A)
6. (D)	31. (D)	56. (C)	81. (B)	106. (D)	131. (B)	156. (B)	181. (B)
7. (D)	32. (C)	57. (C)	82. (A)	107. (B)	132. (B)	157. (B)	182. (C)
8. (A)	33. (C)	58. (D)	83. (A)	108. (B)	133. (A)	158. (D)	183. (B)
9. (B)	34. (B)	59. (B)	84. (D)	109. (A)	134. (B)	159. (B)	184. (B)
10. (D)	35. (B)	60. (A)	85. (C)	110. (A)	135. (B)	160. (A)	185. (A)
11. (D)	36. (C)	61. (C)	86. (B)	111. (C)	136. (B)	161. (D)	186. (A)
12. (B)	37. (A)	62. (B)	87. (A)	112. (B)	137. (C)	162. (C)	187. (C)
13. (D)	38. (D)	63. (B)	88. (B)	113. (C)	138. (A)	163. (A)	188. (B)
14. (D)	39. (B)	64. (D)	89. (B)	114. (B)	139. (B)	164. (A)	189. (B)
15. (B)	40. (D)	65. (A)	90. (C)	115. (C)	140. (B)	165. (B)	190. (D)
16. (D)	41. (A)	66. (B)	91. (B)	116. (A)	141. (B)	166. (B)	191. (D)
17. (C)	42. (C)	67. (B)	92. (D)	117. (A)	142. (B)	167. (D)	192. (B)
18. (C)	43. (B)	68. (C)	93. (C)	118. (A)	143. (B)	168. (D)	193. (D)
19. (B)	44. (A)	69. (C)	94. (D)	119. (A)	144. (D)	169. (C)	194. (B)
20. (C)	45. (C)	70. (C)	95. (A)	120. (D)	145. (B)	170. (A)	195. (D)
21. (C)	46. (D)	71. (C)	96. (A)	121. (C)	146. (B)	171. (B)	196. (C)
22. (B)	47. (D)	72. (D)	97. (B)	122. (C)	147. (C)	172. (D)	197. (C)
23. (C)	48. (C)	73. (C)	98. (D)	123. (D)	148. (B)	173. (B)	198. (D)
24. (B)	49. (B)	74. (C)	99. (C)	124. (C)	149. (C)	174. (A)	199. (D)
25. (D)	50. (B)	75. (C)	100. (A)	125. (D)	150. (B)	175. (D)	200. (D)

For all general competitive exams

