

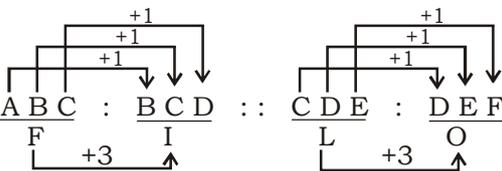
CPO MOCK TEST – 36 (SOLUTION)

1. (A) $\begin{matrix} B & O & R & E \\ \downarrow & \downarrow & \downarrow & \downarrow \\ 2 & +15 & +18 & +5 = 40 \\ 40 \div 4 = 10 \end{matrix}$ (Divided by the number of letters)
Similarly,

$$\begin{matrix} H & O & T & E & L \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ 8 & +15 & +20 & +5 & +12 = 60 \end{matrix}$$

$60 \div 5 = 12$ (Divided by the number of letters)

2. (D) Second is the quality which is present in the first except in option (D).



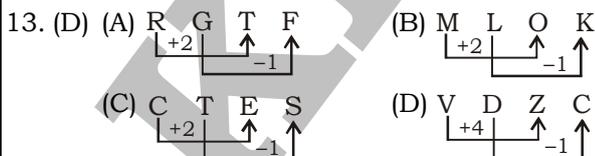
3. (C) $\begin{matrix} A & B & C & : & B & C & D \\ \downarrow & \downarrow & \downarrow & & \downarrow & \downarrow & \downarrow \\ F & & & & I & & \end{matrix}$ $\begin{matrix} C & D & E & : & D & E & F \\ \downarrow & \downarrow & \downarrow & & \downarrow & \downarrow & \downarrow \\ L & & & & O & & \end{matrix}$
4. (B) Cloth is made from thread. Similarly, Mesh is made from wire.
5. (B) Cloth is cut by Scissors. Similarly, Wood is chopped by Axe.
6. (B) Music is a combination of Notation. Similarly, the pattern of poem is formed by the combination of Stanza.
7. (A) Stamp collectors are called the Philatelist. Similarly, coins collectors are called the Numismatist.

8. (A) $\frac{K}{T} = \frac{11}{20}$ \rightarrow Place value

Similarly,

$$\frac{J}{R} = \frac{10}{18} \rightarrow \text{Place value}$$

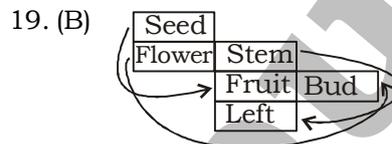
9. (C) $212 + 224 = 436$
 $560 + 224 = 784$
10. (C)
11. (C) In all other options money is deposited whereas amounts is paid in the salary.
12. (D) Except option (D) all games are played between two players.



14. (D) $9 \frac{1}{11} = \frac{100}{11}$; $7 \frac{9}{13} = \frac{100}{13}$; $5 \frac{15}{17} = \frac{100}{17}$

But, $5 \frac{6}{19} = \frac{101}{19}$

15. (D) Except option (D), all other pairs are composite number.
16. (C) Except option (C), all are related to entertainment.
17. (C) $84 - 67 = 17$
 $112 - 95 = 17$
 $79 - 63 = 16$
 $167 - 150 = 17$
18. (C) Except option (C) all are related to navy.



20. (D) $24 + 8 - 4 \times 2 \div 3 = 47$
After changing the sign
 $24 \times 8 \div 4 + 2 - 3 = 47$
 $= 24 \times 2 + 2 - 3 = 47$
 $= 48 + 2 - 3 = 47$
 $= 50 - 3 = 47$
 $= 47 = 47$ (True)

21. (A) Moc Don Cil \rightarrow Beautiful Big House(i)
Fit Kon Don \rightarrow House is Fine(ii)
Bai Tin Fit \rightarrow Cost is More(iii)

From eq. (i) & (ii)

House and Don are common

So, House \Rightarrow Don

From eq. (ii) & (iii)

'Is' and 'Fit' are common

So, Is \Rightarrow Fit

Then, Kon \Rightarrow Fine [from eq. (ii)]

22. (C) RETURN

23. (B) $\frac{15+12}{3} = 9$; $\frac{44+28}{8} = 9$;

$$\frac{64+53}{13} = 9$$

24. (B) $14 \times 4 = 56$ $16 \times 4 = 64$ $15 \times 4 = 60$
 $\sqrt{25} = 5$ $\sqrt{81} = 9$ $\sqrt{49} = 7$

25. (A) $\sqrt{169} + \sqrt{64} + \sqrt{81} = 13 + 8 + 9 = 30$

$$\sqrt{625} + \sqrt{324} + \sqrt{44} = 25 + 18 + 7 = 50$$

$$\sqrt{1296} + \sqrt{576} + \sqrt{100} = 36 + 24 + 10 = 70$$

26. (C) $8 - 5 \quad 9 - 6 \quad 5 - 2$
 $\downarrow \quad \downarrow \quad \downarrow$
 $(3 \quad 3 \quad 3)$

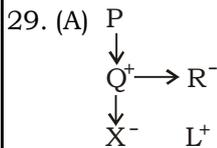
$8 - 2 \quad 10 - 4 \quad 15 - 9$
 $\downarrow \quad \downarrow \quad \downarrow$
 $(6 \quad 6 \quad 6)$

$6 - 3 \quad 15 - 9 \quad 14 - 12$
 $\downarrow \quad \downarrow \quad \downarrow$
 $(3 \quad 6 \quad 2)$

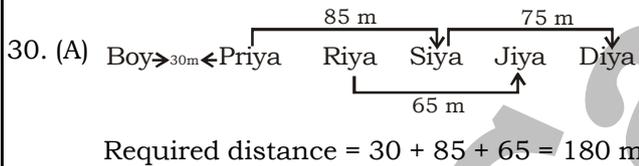
27. (B) $(2 + 6 + 2 + 3)^2 - 1 = 168$
 $(3 + 5 + 1 + 2)^2 - 1 = 120$
 $(2 + 3 + 5 + 4)^2 - 1 = \mathbf{195}$

28. (A) $\frac{\text{Leopard}}{6} \quad \frac{\text{Load}}{4} \quad \frac{\text{Loan}}{3} \quad \frac{\text{Loath}}{1} \quad \frac{\text{Long}}{2}$

 $\frac{\text{Luminous}}{5}$



So, L is grandson of P.

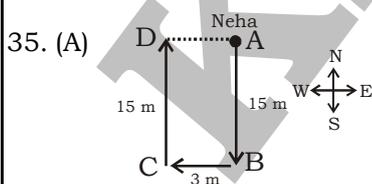


31. (B)

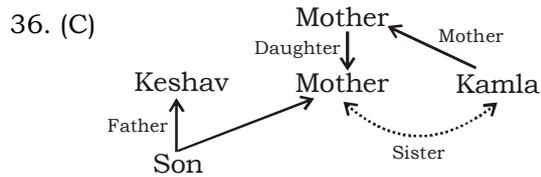
32. (C)

33. (B) $\frac{\text{Stone}}{5} \quad \frac{\text{Rock}}{1} \quad \frac{\text{Hill}}{2} \quad \frac{\text{Mountain}}{3} \quad \frac{\text{Range}}{4}$

34. (C) Let the number of boys be x .
 $2x + 4(7 - x) = 20$
 $2x + 28 - 4x = 20$
 $8 = 2x$
 $4 = x$
 Then, number of dogs = $7 - 4 = 3$

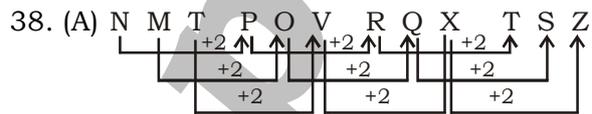


Hence, Neha is facing towards the North direction.



37. (B) Rahul : Rani = $x : 10x$
 Today = $x + 10x + \underbrace{10 \text{ yrs}}_{5 \text{ yrs of each}} = 32$ yrs.
 $11x = 22$
 $x = 2$

Rahul : Rani = $2 : 20$ (5 yrs ago.)
 $+15 \quad +15$
 $\downarrow \quad \downarrow$
 17 yrs 35 yrs
 after 10 yrs from today (Total 15 yrs)



39. (A) $2 \quad 6 \quad 12 \quad 20 \quad 30 \quad 42 \quad 56$
 $+4 \quad +6 \quad +8 \quad +10 \quad +12 \quad +14$

40. (B) $a a \underline{a} / b a a \underline{b} / a a \underline{a} / b a a \underline{b}$

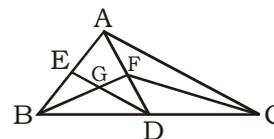
41. (D) $b a a \underline{b} / \underline{b} a a b / \underline{b} a a b / b a a \underline{b}$

42. (C) People who don't play any game
 $= 40 - (25 + 22 - 16)$
 $= 40 - 31 = 9$

43. (C) Three meaningful word.

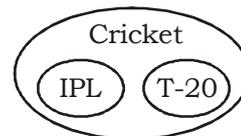
ELECTION
ELECTRON
ELECTRIC

44. (B)



There are 13 triangles in the given figure.
 $\triangle ABC, \triangle ABD, \triangle ADC, \triangle AFC, \triangle FDG,$
 $\triangle AFB, \triangle FDB, \triangle FBC, \triangle GBD, \triangle ADE,$
 $\triangle GBE, \triangle FDG$ and $\triangle DBE$

45. (B)



46. (A)

47. (C)

48. (B)

49. (B)

50. (B)

- 52.(C) Facebook has appointed Ajit Mohan as managing director and vice president of India operations. Mr. Mohan, who was previously the CEO of video streaming platform Hotstar.
54. (C) With the onset of World War I, the British stiffened censorship and restrictions on political activity. Azad's Al-Hilal was consequently banned in 1914 under the Press Act for spreading extremist views. From November 12, 1915, Azad started a new journal, the Al-Balagh and again he started propagating revolutionary ideas and nationalism through this paper. During that time he supported the Khilafat movement. In 1916 the government banned Al-Balagh under Defence of India Regulation Act.
- 55 (A) Anthony Sinisuka Ginting has won the Men's singles title of China open by defeating Japan's Kento
57. (C) Contour ploughing is the farming practice of ploughing across a slope following its elevation contour lines. The rows from slow water run-off during rainstorms to prevent soil erosion and allow the water time to settle into the soil.
61. (D) The Volga is the largest river in Europe in terms of length, discharge, and watershed. It flows through the western part of Russia and is widely viewed as the national river of Russia.
63. (D) At present, the IUCN Red List of Threatened Species (also known as the Red Data List) lists eight classes of organism under the group of threatened categories of critically endangered. The classes of organism for which the 'threatened' tag is applied are mammals, birds, reptiles, amphibians, fishes, insect, mollusc and plants.
65. (B) Satyameva Jayate (Truth Alone Triumphs) is a mantra from the ancient Indian scripture Mundaka Upanishad which is one of the earlier, primary(mukhya) Upanishad , a genre of Hindu scriptures commented upon by Shankara. It is associated with the Atharva Veda. Upon independence of India, it was adopted as the national motto of India. The origin of the motto is a well-known mantra 3.1.6 from the Mundaka Upanishad.
67. (D) If the mass of the body is m , the force of attraction of the earth, or the weight w of the body, is given by the Newton's law of gravitation as $w = mg$, with acceleration due to gravity $g = \frac{GM}{R^2}$ where M and R are the mass and radius of the Earth respectively. Weight of the body is maximum at the centre of the earth and zero at the centre of the earth.
68. (C) A microcomputer is a small relatively inexpensive computer with microprocessor as its Central Processing Unit (CPU). It is most commonly associated with the first wave of all-in-one 8-bit home computers and small business microcomputer (such as the Apple II, Commodore 64, BBC Micro, and TRS 80).
70. (A) Pitch is a perceptual property that allows the ordering of sounds on frequency-related scale. Pitch may be quantified as a frequency – related scale. Pitch is not a purely objective physical property. It is a subjective psycho-acoustical attribute of sound. When the frequency is high, the wavelength of the sound is shorter.
71. (C) Rajasthan is a land-locked state which is bordered by Pakistan to the west, Gujarat to the south-west, Madhya Pradesh to the south-east, Uttar Pradesh and Haryana to the north-east and Punjab to the north.
- 73.(A) Padmaja Chundurur has assumed charge as its Managing Director and CEO of Indian Bank.
- Indian Bank**
- Founded: 15 August 1907
 - Headquarters: Chennai
 - Tagline: Your Own Bank
74. (C) All proteins contain Nitrogen. Precisely, they contain about 16 percent Nitrogen. The determination of protein requirement is based on Nitrogen balance, which include total Nitrogen in food and excreta.
- 76.(C) Fourth edition of India International Science Festival will be inaugurated by President Ram Nath Kovind in Lucknow. The first and second IISF were held in New Delhi and the third in Chennai.
79. (B) The 52nd Constitutional Amendment of 1985 amended articles 101, 102, 190 and 191; and inserted Schedules 10 to the Constitution of India. It dealt with the Anti Defection Law and provided disqualification of members from parliament and assembly in case of defection from one party to other.
80. (C) Services provided by housewives can be categorized as non-economic services and thus cannot be accounted in national income which is the sum total of all the goods and services produced in a country, in a particular period of time.

83. (C) The international Monetary Fund has headquarters in Washington, D.C., United States. It is an international organization that was created on July 22, 1944 at the Bretton Woods conference and came into existence on December 27, 1945 when 29 countries signed the Articles of Agreement.
84. (B) Dr. A.P.J. Abdul Kalam is the undisputed father of India's missile programme. He has breathed life into ballistic missiles like the Agni and Prithvi, which put China and Pakistan well under India's missile range. It is too exhausting to track Dr Abdul Kalam's achievements to date. In the 60s and 70s he was a trail blazer in the space department. In the 80s he transformed the moribund Defence Research and Development Laboratory in Hyderabad into a highly motivated team. By the 90s Kalam emerged as the boon for Indian science and technology and was awarded the Bharat Ratna.
85. (C) Hot money is a term that is most commonly used in financial markets to refer to the flow of funds for capital) from (or capital) from one country to another in order to earn a short-term profit on interest rate differences and/or anticipated exchange rate shifts. These speculative capital flows are called "hot money" because they can move very quickly in and out markets, potentially leading to market instability.
88. (D) Lysosomes are known as digestive bag because it digest foreign material as well as worn out cell organelles. They contain powerful digestive enzymes which are capable of breaking down all organic materials.
89. (C) The decibel (DB) is a logarithmic unit that indicates the ratio of a physical quantity (usually power or intensity) relative to a specified or implied reference level. A ratio in decibels is ten times the logarithm to base 10 of the ratio of two power quantities.
90. (B) Terra Rossa' in Latin or Italian language is another name for "Red Soil" or "Red Terrain". It is a type of red clay soil produced by the weathering of limestone. Terra Rossa is typically found in regions with a Mediterranean climate.
91. (C) Gross domestic product (GDP) is the market value of all officially recognized final goods and services produced within a country in a given period of time. The united Nations Conference on the Law of the Sea has defined sovereign rights over international waters by defined concepts as Internal waters, exclusive economic zones (EEZs), continental shelf jurisdiction, etc. According to this law, the income generated by Indian fishermen would be accounted in GDP of India.
92. (B) Calcium Sulphate is a common laboratory and industrial chemical. In the form of anhydrite (the nearly anhydrous form), it is used as a desiccant. It is also used as coagulant in products like tofu. The main sources of calcium sulphate are naturally occurring gypsum and anhydrite which occur at many locations worldwide as evaporates.
93. (C) The Ashoka Chakra is a depiction of the Buddhist Dharmachakra, represented with 24 spokes. The most visible use of the Ashoka Chakra today is at the centre of National flag of the Republic of India (adopted on 22 July, 1947), where it is rendered in a Navy-blue colour on a White background by replacing the symbol of Charkha (Spinning wheel) of the pre-independence versions of the flag.
94. (B) Former BCCI President Biswanath Dutt has passed away recently. He was 92.
- Board of Control for Cricket in India**
- Founded: 1928
 - Headquarters: Mumbai, Maharashtra
 - President: C K Khanna
97. (B) The red blood cells develop in the bone marrow and circulate for about 100-120 days in the body before their components are recycled by macrophages. Each circulation takes about 20 seconds. Approximately a quarter of the cells in the human body are red blood cells.
98. (C) The amoebas do not have nervous system, but they communicate by means of the interaction of the cellular membrane with the outside that surrounds them. In response to an injurious stimulus, irritating or nutritional, the intracellular communication produces a reaction of the complete cell, moving away or approaching the respective stimulus.

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99. (A) Biogas typically refers to a gas produced by breakdown of organic matter in the absence of oxygen. Organic waste such as dead plant and animal material, animal faeces and kitchen waste can be converted into a gaseous fuel called biogas. Biogas originates from biodegradable materials such as biomass, manure, sewage, municipal waste, green waste, plant material, and crops, Biogas comprises primarily methane (CH₄) and carbon dioxide (CO₂) and may have small amounts of hydrogen Sulphate (H₂S), moisture and siloxanes.

100(D). New Development Bank (NDB) has approved a USD 525-million loan to Madhya Pradesh for infrastructure projects.

New Development Bank (NDB)

- Formation: July 2014 (Treaty signed) + July 2015 (Treaty in force)
- Headquarters: Shanghai, China
- President: K.V. Kamath
- Member Country: Brazil, Russia, India, China, South Africa

101. (C) $4 \sec^2\theta + 9 \operatorname{cosec}^2\theta$
 $= 4(1 + \tan^2\theta) + 9(1 + \cot^2\theta)$
 $= 13 + 4 \tan^2\theta + 9 \cot^2\theta$

$\therefore a + b \geq 2\sqrt{ab}$

The minimum value of $a + b$ is $2\sqrt{ab}$

Then the minimum value of

$4 \tan^2\theta + 9 \cot^2\theta = 2\sqrt{4 \tan^2\theta \cdot 9 \cot^2\theta}$

$= 2 \times 6 = 12$

Hence, minimum value $= 13 + 12 = 25$

102. (D) Let number of sides be n .
 Each exterior angle of regular polygon of n

sides $= \frac{360^\circ}{n}$

Each interior angle $= \frac{(n-2)180^\circ}{n}$

ATQ,

$\frac{360^\circ}{n} = \frac{1}{3} \left[\frac{(n-2) \times 180}{n} \right]$

$\Rightarrow \frac{360}{n} = \frac{(n-2)60}{n} \Rightarrow 360 = (n-2)60$

$\Rightarrow n = 8$

103. (D) A's 1 day work $= \frac{1}{15}$

B's 1 day work $= \frac{1}{20}$

(A + B)'s 1 day work $= \left(\frac{1}{15} + \frac{1}{20} \right) = \frac{7}{60}$

(A + B)'s 4 days work $= \left(\frac{7}{60} \times 4 \right) = \frac{7}{15}$

Therefore,

Remaining work $= \left(1 - \frac{7}{15} \right) = \frac{8}{15}$

104. (A) We know the sum of square of first n natural number is $= \frac{n(n+1)(2n+1)}{6}$

Now, $25^2 + 26^2 + \dots + 50^2$
 $= (1^2 + 2^2 + \dots + 50^2) - (1^2 + 2^2 + \dots + 24^2)$

$= \frac{50(50+1)(100+1)}{6} - \frac{24(24+1)(48+1)}{6}$

$= \frac{50 \times 51 \times 101}{6} - \frac{24 \times 25 \times 49}{6}$

$= 42925 - 4900 = 38025$

105. (C) Let number of men = x ,
 number of women = y
 \Rightarrow Efficiency of 4 men and 6 women

$= \frac{100}{10} = 10\%$

$\Rightarrow 4x + 6y = 10$

Above equation means 4 men and 6 women can do 10% of a the job in one day.

\Rightarrow Efficiency of 3 men and 7 women

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

$\Rightarrow 3x + 7y = 12.5$

By solving both equations we get, $x = -0.5$ and $y = 2$

\Rightarrow Efficiency of 1 women (y) = 2% per day

\Rightarrow Efficiency of 10 women per day = 20%

\Rightarrow 10 women can complete the job in

$= \frac{100}{20} = 5 \text{ days}$

106. (C) Let total votes = x
 \therefore Winner gets = $(100-35)\%$ of $x = 65\%$ of x
 Difference = $(65-35)\%$ of $x = 30\%$ of x
 \therefore According to condition
 30% of $x = 450$

$\Rightarrow x = \frac{450}{30} \times 100 = 1500$

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107. (A) Let the required amount be x .

ATQ,

$$750 = x \times \frac{125}{100} \times \frac{125}{100} \times \frac{125}{100}$$

$$x = \frac{750 \times 100 \times 100 \times 100}{125 \times 125 \times 125} = ₹ 384$$

108. (D) Total age of 26 labourers = 26×30
= 780 yrs

$$\begin{aligned} \text{Required age} &= 780 - 25 \times 30 + (26 - 1) \times \frac{1}{5} \\ &= 780 - 25 \times 30 + 5 \\ &= 780 - 750 + 5 \\ &= 35 \text{ yrs} \end{aligned}$$

109. (C)
$$\frac{2 \times (37)^2 - \frac{1}{2}}{2 \times 37 - 1} = \frac{2738 - \frac{1}{2}}{74 - 1}$$

$$= \frac{5476 - 1}{2 \times 73} = \frac{5475}{146} = 37.5$$

110. (B) Here,
118% of cost - 112% of cost = ₹ 18
⇒ 6% of cost = ₹ 18
⇒ cost = $\frac{18 \times 100}{6} = ₹ 300$.

111. (C)
$$\frac{x^3 + \frac{1}{x}}{x^2 - x + 1}$$

Dividing by x , we have

$$\begin{aligned} &= \frac{x^2 + \frac{1}{x^2}}{x - 1 + \frac{1}{x}} = \frac{\left(x + \frac{1}{x}\right)^2 - 2 \cdot x \cdot \frac{1}{x}}{\left(x + \frac{1}{x}\right) - 1} \\ &= \frac{3^2 - 2}{3 - 1} = \frac{7}{2} \end{aligned}$$

112. (B) Let the installment amount be ₹100.

For fourth year = $100 + \left(\frac{100 \times 4 \times 3}{100}\right) = 112$

For third year = $100 + \left(\frac{100 \times 4 \times 2}{100}\right) = 108$

For second year = $100 + \left(\frac{100 \times 4 \times 1}{100}\right) = 104$

For first year = $100 + \left(\frac{100 \times 4 \times 0}{100}\right) = 100$

$$\text{Total} = 112 + 108 + 104 + 100 = 424$$

$$424 \xrightarrow{\times 2} 848$$

So annual equal installment

$$= 100 \xrightarrow{\times 2} ₹ 200$$

113. (B) Here instead of every kilometre, every 7th kilometre is given. Hence, we should first calculate no. of times he rests i.e.

$$\frac{84}{7} = 12$$

$$\begin{aligned} \text{Required answer} &= \frac{84}{14} + 12 \times \frac{6}{60} \\ &= 6 \text{ hrs} + 1 \text{ hr } 12 \text{ min} \\ &= 7 \text{ hrs } 12 \text{ min} \end{aligned}$$

114. (A) $p \propto \frac{1}{p}$

$$pq = k$$

Let q will be decreased by $x\%$

$$\left\{ p, p \propto \frac{100}{100} \right\} \times q \left(\frac{100 - x}{100} \right) = k$$

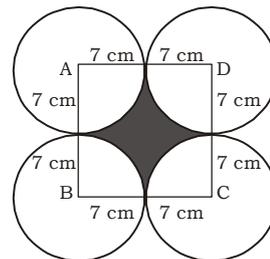
$$2p \times q \left(\frac{100 - x}{100} \right) = pq$$

$$2 \times \frac{100 - x}{100} = 1$$

$$\Rightarrow x = 50$$

q is decreased by 50%.

115. (A)



$$\begin{aligned} \text{Area of square} &= 14^2 \\ &= 196 \text{ sq. cm} \end{aligned}$$

$$\text{Area of all sectors} = \frac{1}{4} \times 4 \times \pi r^2$$

$$= \frac{22}{7} \times 7 \times 7 = 154 \text{ sq. cm.}$$

$$\begin{aligned} \text{Required area} &= 196 - 154 \\ &= 42 \text{ cm}^2 \end{aligned}$$

116. (C) Part of the cistern filled by pipe X in

$$18 \text{ minutes} = \frac{18}{24} = \frac{3}{4}$$

$$\text{Remaining part} = 1 - \frac{3}{4} = \frac{1}{4}$$

∴ Pipe Y can fill the whole cistern in 32 minutes

∴ Pipe Y can fill $\frac{1}{4}$ part in $\frac{1}{4} \times 32 = 8$ min

⇒ Pipe Y should be closed after 8 minutes.

117. (B) In ΔTQR , $90^\circ + 40^\circ + x = 180^\circ$
(Angle sum property of a triangle)

Therefore, $x = 50^\circ$

Now, $y = \angle SPR + x$

Therefore, $y = 30^\circ + 50^\circ = 80^\circ$

$$118. (D) \frac{2x}{3x^2 - 5x + 3} = \frac{\frac{2x}{x}}{\frac{3x^2}{x} - \frac{5x}{x} + \frac{3}{x}}$$

$$= \frac{2}{3x + \frac{3}{x} - 5} = \frac{2}{3\left(x + \frac{1}{x}\right) - 5}$$

$$= \frac{2}{3 \times 5 - 5} = \frac{2}{10} = \frac{1}{5}$$

119. (B) $r = h$ (Given)

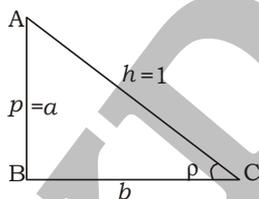
Ratio of volumes

$$= \frac{2}{3} \pi r^3 : \pi r^2 h : \frac{1}{3} \pi r^2 h = \frac{2}{3} r^3 : r^3 : \frac{1}{3} r^3$$

$$= \frac{2}{3} : 1 : \frac{1}{3} = 2 : 3 : 1.$$

120. (C) If $10^\circ 6' 32'' = \theta$, then
 $79^\circ 53' 28'' = 90^\circ - \theta$

$$\therefore \sin \theta = a = \frac{p}{h}$$



$$\therefore b = \sqrt{1 - a^2}$$

$$\therefore \cos(79^\circ 53' 28'') + \tan(10^\circ 6' 32'')$$

$$= \cos(90^\circ - \theta) + \tan \theta$$

$$= \sin \theta + \tan \theta = a + \frac{a}{\sqrt{1 - a^2}}$$

$$= \frac{a\sqrt{1 - a^2} + a}{\sqrt{1 - a^2}} = \frac{a(1 + \sqrt{1 - a^2})}{\sqrt{1 - a^2}}$$

121. (D) Area of $\Delta FBE = 108 \text{ cm}^2$

Let each side be $6x$.

$$\therefore BE = \frac{1}{3} BC = \frac{1}{3} \times 6x = 2x$$

$$BF = \frac{1}{2} AB = \frac{1}{2} \times 6x = 3x$$

$$\text{Area of } \Delta FBE = \frac{1}{2} 3x \times 2x = 3x^2$$

$$\therefore 3x^2 = 108$$

$$\therefore x^2 = 36$$

$$\Rightarrow x = 6 \text{ cm.}$$

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

$$\Rightarrow AC^2 = 2(36)^2$$

$$\Rightarrow AC = 36\sqrt{2} \text{ cm.}$$

122. (B) Roots of equation are real and equal then,

$$b^2 - 4ac = 0$$

$$\therefore (-p)^2 - 4 \times 25 \times 4 = 0$$

$$p^2 = 400$$

$$p = \pm 20.$$

123. (A) Weight of new men = Weight of outgoing man + increase in Weight \times No. of men

$$= 60 + 1 \times 8$$

$$= 68 \text{ kg}$$

124. (B) SI = ₹ (7200 - 6000) = ₹ 1200

$$\therefore \text{SI} = \frac{PRT}{100} \Rightarrow 1200 = \frac{6000 \times R \times 4}{100}$$

$$\Rightarrow R = \frac{1200 \times 100}{6000 \times 4} = 5\%$$

New rate (R) = $5 \times 1.5 = 7.5\%$

$$\text{Then, SI} = \frac{6000 \times 7.5 \times 5}{100} = ₹ 2250$$

$$\therefore \text{Amount} = ₹ (6000 + 2250) = ₹ 8250$$

125. (B) Let the distance of the place be x km. According to the question,

$$\frac{x}{6 - 2} - \frac{x}{6 + 2} = 3$$

$$\Rightarrow \frac{x}{4} - \frac{x}{8} = 3$$

$$\Rightarrow x = 8 \times 3 = 24 \text{ km}$$

126. (A) Required time = 7 AM + $\frac{24 - 4}{4 + 6}$

$$= 7 \text{ AM} + \frac{20}{10} \text{ hrs}$$

$$= 9 \text{ AM}$$

Required distance = $4 \times 3 = 12$ km from Delhi and also 12 km from Alwar

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127. (D) Let the CP be 100%

ATQ,

$$80\% \text{ of } \frac{125}{100} = 120\% - 75$$

$$\Rightarrow 100\% = 120\% - 75$$

$$\Rightarrow 75 = 20\%$$

$$\Rightarrow 100\% = \frac{75}{20} \times 100$$

$$= ₹ 375$$

128. (A) Let the third number be 100.

then, the first number = 135

the second number = 150

$$\text{Required percentage} = \frac{135}{150} \times 100 = 90\%$$

129. (A) $\sqrt{48} - \sqrt{45} = \sqrt{3} (\sqrt{16} - \sqrt{15})$

Multiplying numerator and denominator by

$$2, \text{ we get } \frac{\sqrt{3}(\sqrt{64} - 2\sqrt{15})}{2}$$

$$= \frac{\sqrt{3}}{2} (8 - 2 \times \sqrt{5} \times \sqrt{3}) = \frac{\sqrt{3}}{2} (\sqrt{5} - \sqrt{3})^2$$

$$\therefore \text{Required square root} = \frac{\sqrt[4]{3}}{\sqrt{2}} (\sqrt{5} - \sqrt{3})$$

130. (A) Area of the field

$$= \frac{\text{Total cost}}{\text{Cost per hectare}} = \frac{486}{36} = \frac{27}{2} \text{ hectare}$$

$$\therefore \text{Area of the field} = \frac{1}{2} \times 3 \times \text{Height} \times \text{Height}$$

$$= \frac{3}{2} (\text{Height})^2 \quad (\because \text{Base} = 3 \times \text{Height})$$

$$\Rightarrow \frac{3}{2} (\text{Height})^2 = \frac{27}{2} \text{ hectares.}$$

$$\Rightarrow (\text{Height})^2 = \frac{27}{2} \times \frac{2}{3} = 9 \text{ hectares}$$

$$= 90000 \text{ sq.m}$$

$$\Rightarrow \text{Height} = \sqrt{90000} = 300 \text{ m.}$$

and, base = 3 × Height = 900 m.

131. (B) $180^\circ = \pi$ Radian

$$\Rightarrow 27^\circ = \frac{\pi}{180^\circ} \times 27^\circ = \left\{ \frac{3\pi}{20} \right\}^c$$

132. (B) Sum of 4 new numbers

$$= 50 \times 104 - 100 \times 44$$

$$= 5200 - 4400 = 800$$

$$\therefore \text{Average} = \frac{800}{4} = 200$$

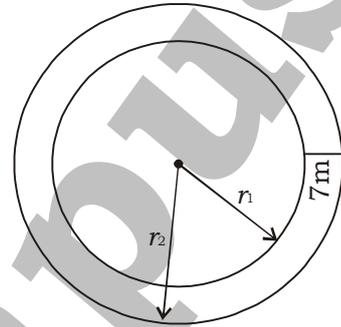
133. (A) Let the radius of inner circle be r_1

$$\therefore 2\pi r_1 = 704$$

$$\Rightarrow r_1 = \frac{704}{2\pi} = \frac{704 \times 7}{2 \times 22} = 112 \text{ m.}$$

Let the radius of outer circle = r_2

$$\therefore r_2 = r_1 + 7 = 112 + 7 = 119 \text{ m.}$$



$$\therefore \text{Area of the path} = \pi r_2^2 - \pi r_1^2$$

$$= \pi (r_2^2 - r_1^2) = \pi (r_2 + r_1) (r_2 - r_1)$$

$$= \frac{22}{7} \times (119 + 112) (119 - 112) = \frac{22}{7} \times 231 \times 7$$

$$= 5082 \text{ m}^2$$

134. (C) Let the share of B = ₹ x.

Then share of A = ₹ (3903 - x)

ATQ,

$$(3903 - x) \left(1 + \frac{4}{100} \right)^7 = x \left(1 + \frac{4}{100} \right)^9$$

$$\Rightarrow (3903 - x) = x \left(\frac{26}{25} \right)^2 = \frac{676x}{625}$$

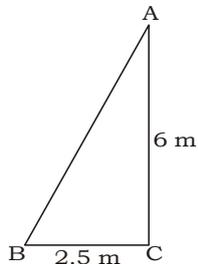
$$\Rightarrow 3903 \times 625 - 625x = 676x$$

$$\Rightarrow 1301x = 3903 \times 625$$

$$\Rightarrow x = \frac{3903 \times 625}{1301} = ₹ 1875$$

] Share of B = ₹ 1875

135. (D) Let AB be the ladder and CA be the wall with the window at A. Also, BC = 2.5 m and CA = 6 m



From Pythagoras Theorem, we have

$$AB^2 = BC^2 + CA^2$$

$$\Rightarrow AB^2 = (2.5)^2 + (6)^2 = 42.25$$

$$\Rightarrow AB = 6.5$$

Thus length of the ladder is 6.5 m.

136. (B) Cost price of all the mangoes = ₹ 1440

Cost price of the mangoes sold

$$= 800 - 44 = ₹ 756$$

∴ Highest possible cost price of each mango

(HCF of 1440 and 756) = 36

Again the cost price of the mangoes left

$$= 1440 - 756 = 684$$

∴ The minimum number of mangoes left

$$= 684 \div 36 = 19$$

137. (A) Required Ratio = $\frac{(50 - 56) + \frac{40}{100} \times 50}{56}$

$$= \frac{-6 + 20}{56} = \frac{14}{56} = \frac{1}{4} = 1 : 4$$

138. (B) Sides opposite to equal angles are equal.

Here,

$$\angle ADB = \angle CAD = 30^\circ$$

So, Sides AC = CD.

139. (C) Let the number of boys be $2x$ and the number of girls be $3x$.

No. of boys is increased by 20%

$$= 2x \times \frac{120}{100} = \frac{12x}{5}$$

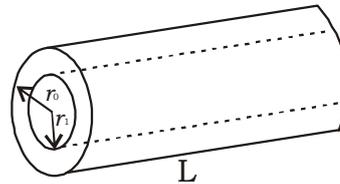
No. of girls is increased by 10%

$$= 3x \times \frac{110}{100} = \frac{33x}{10}$$

The new ratio of the number of boys to that

$$\text{of girls} = \frac{\frac{12x}{5}}{\frac{33x}{10}} = 8 : 11$$

140. (C)



Let r_0 = Outer radius

r_1 = Inner radius

and L = Length of the tube

$$\text{Volume of the outer cylinder} = \pi r_0^2 L$$

$$\text{Volume of the inner cylinder} = \pi r_1^2 L$$

We get the cylindrical tube when we cut out the inner cylinder from the outer cylinder, both the cylinders being concentric.

∴ Volume of the material of the cylindrical

$$\text{tube} = \pi r_0^2 L - \pi r_1^2 L = \pi L (r_0^2 - r_1^2)$$

$$= \frac{22}{7} \times 35 [(15)^2 - (12)^2]$$

$$= 22 \times 5 \times 81 = 8910 \text{ cm}^3$$

141. (D) $x = a + 2b - 3c$

$$y = 3a - b - 2c$$

$$z = 5c - 4a - b$$

On adding $x + y + z = 0$

$$\therefore (x+y)^2 = (-z)^2$$

$$\Rightarrow x^2 + y^2 + 2xy = z^2$$

$$\Rightarrow x^2 + y^2 - z^2 = -2xy$$

$$\Rightarrow \frac{x^2 + y^2 - z^2}{xy} = \frac{-2xy}{xy} = -2$$

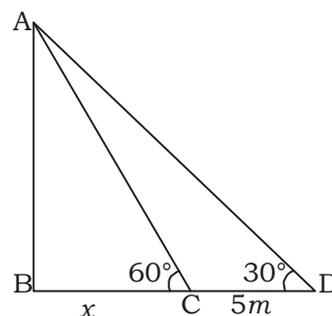
142. (A) Let AB is the pole and BC = x m

The initial length of shadow is BD which reduce to BC.

Then in $\triangle ABC$,

$$\tan 60^\circ = \frac{h}{x}$$

$$\Rightarrow \sqrt{3} = \frac{h}{x}$$



In $\triangle ABC$, $\tan 30^\circ = \frac{AB}{BD}$

$$\Rightarrow \frac{1}{\sqrt{3}} = \frac{h}{x+5}$$

$$\Rightarrow \frac{1}{\sqrt{3}} = \frac{h}{\frac{h}{\sqrt{3}} + 5}$$

$$\Rightarrow \sqrt{3}h = \frac{h}{\sqrt{3}} + 5 \Rightarrow 3h = h + 5\sqrt{3}$$

$$\Rightarrow 2h = 5\sqrt{3} \Rightarrow h = \frac{5\sqrt{3}}{2}$$

$$\Rightarrow \text{Height of pole} = \frac{5\sqrt{3}}{2} \text{ m}$$

143. (A) $\left(\frac{2+\sqrt{3}}{2-\sqrt{3}} + \frac{2-\sqrt{3}}{2+\sqrt{3}} + \frac{\sqrt{3}-1}{\sqrt{3}+1} \right)$

$$= \frac{(2+\sqrt{3})(2+\sqrt{3})}{(2-\sqrt{3})(2+\sqrt{3})} + \frac{(2-\sqrt{3})(2-\sqrt{3})}{(2+\sqrt{3})(2-\sqrt{3})} + \frac{(\sqrt{3}-1)(\sqrt{3}-1)}{(\sqrt{3}+1)(\sqrt{3}-1)}$$

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

$$= \frac{7+4\sqrt{3}}{1} + \frac{7-4\sqrt{3}}{1} + \frac{4-2\sqrt{3}}{2}$$

$$= 14 + 2 - \sqrt{3} = 16 - \sqrt{3}$$

144. (C) Let the required distance be x km.
Then time taken during the first journey

$$= \frac{x}{3} \text{ hr.}$$

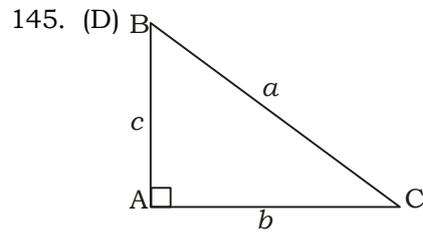
and time taken during the second journey

$$= \frac{x}{2} \text{ hr.}$$

$$\therefore \frac{x}{3} + \frac{x}{2} = 5 \Rightarrow \frac{2x+3x}{6} = 5 \Rightarrow 5x = 30$$

$$\therefore x = 6$$

$$\therefore \text{required distance} = 6 \text{ km}$$



$$\tan B = \frac{\text{Length}}{\text{base}} = \frac{b}{c}$$

$$\tan C = \frac{\text{Length}}{\text{base}} = \frac{c}{b}$$

$$\therefore \tan B + \tan C$$

$$= \frac{b}{c} + \frac{c}{b} = \frac{b^2+c^2}{bc} = \frac{a^2}{bc} \quad (\because a^2 = b^2 + c^2)$$

146. (C) It is clear from the graph that annual premium for a man whose age 26 year is ₹ 45.7

147. (C) Required age of the person is 24 years

148. (D) Required premium = 43.75×10
= ₹ 437.5

149. (B) Required increase

$$= \left| \left(\frac{46.5}{44.25} \cdot 1 \right) \right| \times 100 \approx 100$$

$$= [(1.0508-1) \times 100]\%$$

$$= 5.08\%$$

150. (B) Required difference

$$= (44.25 - 43.50) \times 100$$

$$= 0.75 \times 100 = ₹ 75$$

MEANINGS IN ALPHABETICAL ORDER

Word	Meaning in English	Meaning in Hindi
Apathy	the feeling of not being interested in or enthusiastic about something	उदासीनता
Audacious	willing to take risks or to do something shocking	दुःसाहसी, ढीठ
Ballistophobia	a fear of missiles and projectiles, fear of being shot	मिसाइलों और गोलियों का डर
Blow hot and cold	to be changeable or uncertain (about something)	अस्थिर या अनिश्चित होना
Bucolic	connected with the countryside or country life	देहाती, ग्रामीण
Cheeky	rude in an amusing or an annoying way	धृष्ट, गुस्ताख
Conscience	the part of your mind that tells you whether your actions are right or wrong	अन्तरात्मा, जमीर
Contemporary	belonging to the same time	समसामयिक
Cord	strong thick string or thin rope	रस्सी
Deity	a god or goddess	ईश्वर
Diffidence	a lack of confidence in yourself; being unwilling to talk about yourself	आत्मसंशय
Elicit	to get information or a reaction from somebody	प्रतिक्रिया को जानना या प्राप्त करना
Eulogise	to praise somebody/something very highly	प्रशंसा करना
Extrapolation	to form an opinion or to make an estimate about something from known facts	मुल्यांकन करना, आंकना
Flare	(especially of anger and violence) to suddenly start or become much stronger	भड़कना
Gratitude	a feeling of thankfulness and appreciation	आभार, कृतज्ञता
Hiatus	a pause in activity when nothing happens	अंतराल, रिक्ति
Interpolation	the act of making a remark that interrupts a conversation	टिप्पणी
Jester	a man who in the past was kept by a ruler to amuse people by acting silly and telling jokes	मसखरा, विदूषक
Laconic	using only a few words to say something	मितभाषी
Maim	to injure somebody seriously, causing permanent damage to their body	विकलांग बनाना
Maverick	independent, with unusual opinions	स्वतंत्र विचारों वाला
Merriment	laughter and enjoyment	हर्षोल्लास
Metamorphosis	a process in which somebody/something changes completely into something different	कायापलट, रूपांतरण
Plight	a difficult and sad situation	दुर्दशा
Plunder	to steal things from a place, especially using force during a time of war	लूटना
Profligate	using money, time, materials, etc. in a careless way	अपव्ययी
Prolix	using too many words	शब्दों का आडम्बरपूर्ण उपयोग
Rogue	a man who is dishonest and immoral	दुष्ट
Salacity	the trait of behaving in an obscene manner	कामुकता, अश्लीलता
Set off	to begin a journey	प्रस्थान करना
Shabbiness	the state of being in poor condition or badly dressed because things have been used or worn a lot	फटेहाल अवस्था
Smell a rat	to suspect that something is wrong	संदेह होना
Stenophobia	fear of narrow things or places	संकीर्ण स्थानों का डर
To cut a sorry figure	to leave poor impression	प्रभावहीन
Trembling	shaking slightly because you are afraid, nervous or excited	कांपना
Turn over a new leaf	Make a fresh start / to change for better	नई शुरुआत
Umbrage	feeling offended, insulted or upset by something, often without a good reason	रोष, नाराजगी
Xenophobia	a strong feeling of dislike or fear of people from other countries or anything foreign	विदेशियों या विदेशी वस्तुओं के प्रति विकर्षण या घृणा
Zeal	great energy or enthusiasm connected with something that you feel strongly about	उत्साह, जोश

CPO MOCK TEST - 36 (ANSWER KEY)

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

151. (*) Add 'to' after 'gave'. Replace 'his' by 'her'

152. (C) Change 'sell' to 'sold'. 'V₂' comes after. It is time + subject'

153. (C) Change 'would have broken' into 'would break'. The structure of the sentence is: $If + sub + V_2 +$

$Sub + would + V_1$

154. (A) Change 'appear' into 'appear', since the subject of the sentence 'a number of problems' is plural.

155. (B) Change 'if' into 'whether', 'whether.....or' is the correct pair. 'If...or' is not the correct correlative.

156. (C) Since the sentence is in present perfect tense.

157. (A) 'Elicit' means 'to draw out a reaction or response from somebody'.

159. (C) As the sentence is in present perfect continuous tense.

160. (B) 'Smell a rat' means 'to suspect that something is wrong about a situation'.

161. (C) Change 'reached at calcutta' into 'reached calcutta'. 'Reach' does not take any preposition if it is followed by a destination.

162. (C) Sentence is in Interrogative form.

Change 'you have been doing' into 'have you been doing'?

163. (A) 'Suppose' and 'if never come together as this will make the sentence superfluous.

Change 'Supposing if he comes' into 'If he comes'.

164. (B) Change 'in one quarter of an hour' into 'a quarter of an hour'.

165. (D) The sentence is of past imaginary position. Formula:

$If + sub + were.....$, + $Sub + would + V_1$

and since it is an interrogative sentence, 'sub' is preceded by helping verb 'would'.

166. (A) Change 'ignited' into 'flared'.

Ignite - to set on fire.

'Flare-up' means a sudden occurrence or expression of anger or an occurrence in which something (such as violence) suddenly begins - भड़कना (गुस्सा, हिंसा या आग का)

167. (B) Deny - To declare untrue - किसी बात की सत्यता का खंडन करना

Refuse-Show unwillingness towards-मना करना

Decline - To reject an offer - अस्वीकार करना