

CPO MOCK TEST – 17 (SOLUTION)

1. (A) $4 \Rightarrow 4^3 - 4^2 = 64 - 16 = 48$
 $5 \Rightarrow 5^3 - 5^2 = 125 - 25 = 100$
2. (C) As magnet has poles, similarly battery has **terminals**.
3. (B) As,
 $5^3 - 1 = 124$
 Similarly,
 $9^3 - 1 = 728$

4. (C) As,
- | | | | | | | |
|----|----|----|----|--|----|---|
| S | H | A | D | | O | W |
| +1 | +1 | +1 | +1 | | +1 | |
| \ | | | | | / | |
| E | B | I | T | | X | P |
- Similarly,
- | | | | | | | |
|----|----|----|----|--|----|---|
| D | E | C | C | | A | N |
| +1 | +1 | +1 | +1 | | +1 | |
| \ | | | | | / | |
| D | D | F | E | | O | B |

5. (D)
- | | | | | | | | | | | |
|----------------|---|---|---|---|--|----------------|---|---|---|---|
| S | H | E | E | P | | T | J | I | I | Q |
| Next Vowel | | | | | | Next Vowel | | | | |
| Next Consonant | | | | | | Next Consonant | | | | |
-
- | | | | | | | | | | | | | |
|----------------|---|---|---|---|---|--|----------------|---|---|---|---|---|
| S | O | R | R | O | W | | T | U | S | S | U | X |
| Next Vowel | | | | | | | Next Vowel | | | | | |
| Next Consonant | | | | | | | Next Consonant | | | | | |

6. (A) As President is the nominal head of a country, similarly **Governor** is the nominal head of a State.
7. (C) $74 \Rightarrow 74 - (\text{Reverse } (47)) = 74 - 47 = 27$
 $86 \Rightarrow 86 - (\text{Reverse } (86)) = 86 - 68 = 18$

8. (C)
- | | | | | | | | | |
|----|---|---|---|--|----|---|---|---|
| A | C | R | M | | B | E | U | Q |
| +1 | | | | | +1 | | | |
| +2 | | | | | +2 | | | |
| +3 | | | | | +3 | | | |
| +4 | | | | | +4 | | | |
-
- | | | | | | | | | |
|----|---|---|---|--|----|---|---|---|
| R | L | K | O | | S | N | N | S |
| +1 | | | | | +1 | | | |
| +2 | | | | | +2 | | | |
| +3 | | | | | +3 | | | |
| +4 | | | | | +4 | | | |

9. (D) All except Chess are outdoor games.
10. (B) (A) $150 = 5^3 + 5^2$ (B) $14 = 2^3 + 6$
 (C) $252 = 6^3 + 6^2$ (D) $80 = 4^3 + 4^2$
11. (B) All except Gazelle are animals found in the mountains.

12. (D)
- | | | | | | | |
|----------|----|---|--|----------|----|----|
| B | Y | G | | M | N | V |
| +8 | | | | +8 | | |
| 2 | 25 | 7 | | 13 | 14 | 22 |
| Opposite | | | | Opposite | | |
-
- | | | | | | | |
|----------|----|---|--|----------|----|---|
| F | U | C | | G | T | D |
| +8 | | | | +10 | | |
| 6 | 21 | 3 | | 7 | 20 | 4 |
| Opposite | | | | Opposite | | |

13. (B) All except India are islands, while India is a peninsula.
14. (C) Given time = 9 : 48
 Total minutes in 9 hrs 48 min.
 $= 60 \times 9 + 48 = 588$ min.

Now we have,

$$\frac{\text{Total min in given time}}{2} - (\text{Given minutes} \times 6)$$

$$= \frac{588}{2} - 48 \times 6 = 294 - 288 = 6^\circ$$

15. (D) Originally, let number of women = X. Then, number of men = 2X.
 So, in city Y, we have :
 $(2X - 10) = (X + 5)$ or $X = 15$.
 Therefore, total number of passengers in the beginning = $(X + 2X) = 3X = 45$.
16. (A) Let d and s represent the number of daughters and sons respectively.
 Then, we have :
 $d - 1 = s$ and $2(s - 1) = d$.
 Solving these two equations, we get: $d = 4, s = 3$
 So, total no of children = $3 + 4 = 7$

17. (B) CARE

18. (C)
- | | | | | |
|---|---|---|---|--|
| | A | | | |
| B | C | D | E | |
| | F | | | |

So, C/E, A/F and B/D are opposite to each other.

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19. (D) $8 \times 6 \div 2 - 4 + 8 = 28$
 $\Rightarrow 8 \times 3 - 4 + 8 = 28$
 $\Rightarrow 24 - 4 + 8 = 28$
 $\Rightarrow 24 + 4 = 28$
 $\Rightarrow 28 = 28$

20. (D)

$\frac{\text{Shocker}}{4}$	$\frac{\text{Shout}}{2}$	$\frac{\text{Sink}}{1}$	$\frac{\text{Smuggler}}{3}$
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21. (A)

	<u>No. of letters</u>	
I like You	8	$\times 2 = 16$
I hate u	6	$\times 2 = 12$

22. (C) For first triangle,
 $10 - 4 = 6$
 $18 - 10 = 8$
 $18 - 4 = 14$
 For second triangle,
 $14 - 8 = 6$
 $22 - 14 = 8$
 $22 - 8 = 14$
 For third triangle,
 $11 - 5 = 6$
 $15 - 11 = 4$
 $15 - 5 = 10$

23. (B) $(7 \times 3) = 21$ and $(9 \times 3) = 27$
 and $(4 \times 9) = 36$ and $(2 \times 9) = 18$
 Therefore, $(9 \times 6) = 54$ and $(4 \times 6) = 24$.

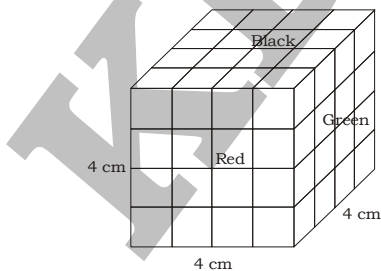
24. (C) $\sqrt{4 \times 9} = 6$
 and $\sqrt{9 \times 16} = 12$

Therefore, $\sqrt{16 \times ?} = 20$
 $\Rightarrow ? = 25$

25. (A) $(15 - 12) + (10 - 9) = 4$
 $(28 - 12) + (16 - 20) = 12$
 Similarly, $(23 - 11) + (15 - 16) = 11$

26. (B) From third and fourth dice, it is clear that digit 2, 3, 4 and 6 can't be opposite to digit 1. So, we can say that digit 5 is opposite to 1 and vice versa.

27. (C) One side of the cube = $\sqrt[3]{64}$



Number of small cubes having no face coloured = $(x - 2)^3$
 $= (4 - 2)^3 = 8$

28. (D) Number of small cubes having only one face coloured = 4 from each face
 $= 4 \times 6 = 24$

29. (B) The arrangement is as follows:
 T Q P R S
 Therefore, P is sitting between Q and R.

30. (D) The pattern of difference is + 0, + 3, + 8, + 15, + 24 i.e. $+(1^2 - 1)$, $+(2^2 - 1)$, $+(3^2 - 1)$, $+(4^2 - 1)$,
 So, missing term = $28 + (5^2 - 1)$
 $= 28 + 24 = 52$

31. (C) The terms of the given series are numbers formed by joining together consecutive odd numbers in order i.e. 1 and 3, 3 and 5, 5 and 7, 7 and 9, 9 and 11,
 So, missing term = number formed by joining 11 and 13 = 1113.

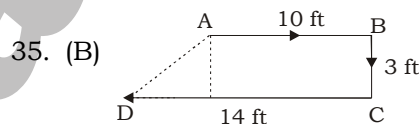
32. (B) The terms of the given series are $(2^2 - 1)$, $(4^2 - 1)$,, $(8^2 - 1)$, $(10^2 - 1)$, $(12^2 - 1)$. So, missing term = $(6^2 - 1) = (36 - 1) = 35$.

33. (C)

0	6	24	60	120	210
↓	↓	↓	↓	↓	↓
1^3-1	2^3-2	3^3-3	4^3-4	5^3-5	6^3-6

So, missing term = $5^3 - 5 = 120$

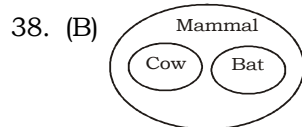
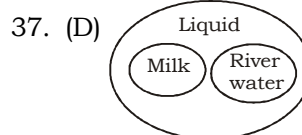
34. (B) Only the child of my father means 'Abhisek' himself. This means the girl is the daughter of Abhisek. Hence, Abhisek's wife is the mother of the girl.



Required distance = AD
 $= \sqrt{3^2 + (14 - 10)^2} = \sqrt{9 + 16} = 5 \text{ ft}$

36. (D)

<u>Education</u>	<u>Job</u>	<u>Income</u>	<u>Well-being</u>
2	4	1	3



39. (D) Neither Conclusion I nor II follows.

40. (A) I directly follows from the statement and so, I is implicit. Also, the statement is a suggestion and does not tell about a government policy or its position of funds. So, II is not implicit.

70. (C) The Committee to Review arrangements for Institution Credit for Agriculture and Rural Development set up by the Reserve Bank of India under the Chairmanship of Shri B. Sivaraman, conceived and recommended the establishment of NABARD.
73. (C) In the world, India's rank in 7th
Total area : - 3287263 km² (1269219 sq m.)
74. (A) Monotremes are mammals that lay eggs instead of giving birth to young ones like marsupials and placental mammals.
76. (C) Helium is lighter than air so it used in the deep divers for breathing. It is a noble gas and belongs to the group of non-reactive gases.
78. (C) Hicky's Bengal Gazette was an English newspaper from Kolkata. It was the first major Newspaper in India.
Started in 1780, it was published for two years.
80. (B) The main feature of this stage is rapid, self-sustained growth.
82. (B) The annual premium of Pradhan Mantri Suraksha Bima Yojana is ₹12. The scheme was launched on 9th May 2015. The payment of premium will be directly auto-debited by the bank account of the subscriber. No other mode is available for paying premium.
Risk Coverage: ⇨ For accidental death and full disability – ₹2 lakh
⇨ For partial disability – ₹1 lakh
83. (A) The President summons both houses (Rajya Sabha and Lok Sabha) of the Parliament and prorogues them. He can dissolve the Lok Sabha.
84. (B) Panchayati Raj System was first adopted by Rajasthan (Nagaur District) on Oct 2 1959.
86. (B) According to Charter Act of 1813 the whole of the country was to be open to the Christian missionaries.
87. (C) (A) Ascorbic Acid : Vitamin C
(B) Chlorophyll : Quencher
(C) Carotenoid : Photosynthetic Pigment
(D) Superoxide : Enzyme
88. (D) To protect elephants, 18 months long nationwide awareness campaign 'Gaj Yatra' is launched by Ministry of Environment, Forest and Climate Change in Meghalaya. It was organised by Wildlife Trust of India with the collaboration with the forest department of state. The campaign was flagged off by the Brand Ambassador of WTI, Dia Mirza. It was originally launched by Dr. Harsh Vardhan on the occasion of World Elephant Day 2017 i.e. observed on August 12th.
90. (B) This is a difficult number to know for certain since we can only see a fraction of the universe even with the most powerful instrument. The most current estimates guess that there are 100 to 200 billion galaxies in the universe.
91. (C) Operation Flood started in 1970, is a project of the National Dairy Development Board (NDDB) which was the world's biggest dairy development programme. Kurien gave the necessary thrust using his professional management skills to the programme and is recognized as its architect father of Operation Flood : Dr Verghese Kurien.
92. (C) Jim Corbett National Park is the oldest national park in India and was established in 1936 as Hailey National Park to protect the endangered Bengal tiger.
93. (C) The relationship between the biotic components of a place is called ecosystem. The producer system is green plants that make their own food.
96. (B) Planning Commission is not a constitutional body. This was set up by resolution of the government of India in March 1950 in pursuance of declared objectives of the Government to promote a rapid rise in the standard of living of the people by efficient exploitation of the resources of the country, increasing production and offering opportunities to all for employment in the service of the community.
97. (B) The Blue Flag Project is related with the development and enhancement of standards of Cleanliness on beaches. It was launched by the Ministry of Environment, Forest and Climate Change. The 'Blue Flag' is a certification by the Foundation for Environment Education (FEE) (headquartered at Denmark) that a beach, marina or sustainable boating tourism operator meets its stringent standards.
99. (C) Anatomy : - Study of internal structure of organism
Agrostology – Study of grass
Agronomy – Science of soil management

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and production of crop

Agrology – Soil Science dealing with production of crop

100. (B) Ozone is found in the stratosphere, where it blocks the sun's UV waves and prevents them from reaching the earth's surface.

101. (C) Population of Hindu in 2013 = 35% of 5 million

$$= \frac{35}{100} \times 5,000,000 = 17,50,000$$

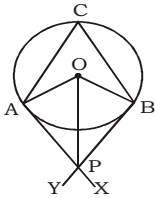
102. (B) Ratio between the Hindu and Sikh population in 2012 = 30 : 45 = 2 : 3

103. (A) Hindu population in 2012 = 30% of 5,00,000 = 1,50,000

Muslim population = 25% of 5,00,000 = 1,25,000

Total population = 1,50,000 + 1,25,000 = 2,75,000

104. (A)



$$\begin{aligned} \angle ACB &= 65^\circ \\ \angle AOB &= 2 \times 65^\circ = 130^\circ \\ \angle OAP &= 90^\circ, \angle AOP = 65^\circ \\ \angle APO &= 180^\circ - 90^\circ - 65^\circ = 25^\circ \end{aligned}$$

105. (C) Area of the base = $\frac{1}{2}$ (sum of parallel sides) \times perpendicular distance

$$= \frac{1}{2} (14 + 8) \times 8 = 88 \text{ sq. cm.}$$

$$\therefore \text{Volume} = \text{Area of the base} \times \text{height}$$

$$\Rightarrow 1056 = 88 \times h$$

$$h = \frac{1056}{88} = 12 \text{ cm}$$

106. (D) 5% $\rightarrow \frac{1}{20}$, 10% $\rightarrow \frac{1}{10}$

20	—	21
20	—	19
10	—	9
4000	—	3591
↓		↓
In Jan		In April
month		month

107. (C) The minimum number of Bananas = L.C.M of (6, 8, 10, 12, 15, 16) + 4 = 24 + 4 \Rightarrow 244

108. (A)

S.I \rightarrow	Ist yr	IInd yr	IIIrd yr
	300	300	300
C.I \rightarrow		18	

$$\therefore r\% = \frac{18}{300} \times 100 \Rightarrow 6\%$$

Difference between S.I and C.I according to the rate for two years \rightarrow 0.36%

ATQ, \rightarrow 0.36 = ₹ 18 (given)

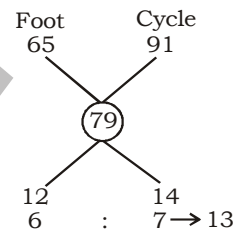
$$\therefore \text{Principal} = \frac{1800}{36} \times 100$$

$$\Rightarrow \text{₹ } 5000$$

109. (A) Assume if he travelled the whole journey on foot then

distance travelled in 13 hours = 13 \times 5 = 65 km

similarly by cycle = 13 \times 7 = 91 km



$$\frac{T_1}{T_2} = \frac{6}{7} \rightarrow \text{foot}$$

$$\frac{T_1}{T_2} = \frac{7}{7} \rightarrow \text{cycle} = 49 \text{ Km}$$

110. (A) 25% = $\frac{1}{4}$ \rightarrow Profit

$\frac{1}{4}$ \rightarrow CP

CP : SP

Old \rightarrow 4x : 5x

Similarly,

CP : SP

New \rightarrow (4x - 950) : (5x - 950)

$$\frac{(4x - 950)}{(5x - 950)} = \frac{10}{13} \left[\because 30\% = \frac{3}{10} \right]$$

$$52x - 950 \times 13 = 50x - 950 \times 10$$

$$2x = 950 (13 - 10)$$

$$x = 475 \times 3 = 1425$$

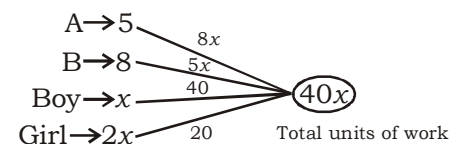
$$\text{Cost price} = 4x = 4 \times 1425 = \text{₹ } 5700$$

111. (A) ATQ,

Boy : Girl

Efficiency : 2x : x

Time : x : 2x



$$\text{ATQ, } \frac{40x}{13x+60} = 3$$

$$\Rightarrow 39x + 180 = 40x$$

$$\Rightarrow x = 180 \text{ days}$$

Time taken by the boy to complete the work = 180 days

Time taken by girl to complete the work = 360 days

Ratio of efficiencies =

$$A : B : \text{Boys} : \text{Girl}$$

$$8 \times 180 : 5 \times 180 : 40 : 20$$

$$72 : 45 : 2 : 1$$

Received wages = ₹ 4800

$$\text{Now, share of A} = \frac{4800}{120} \times 72 = ₹ 2880$$

$$\text{share of B} = \frac{4800}{120} \times 45 = ₹ 1800$$

$$\text{share of Boy} = \frac{4800}{120} \times 2 = ₹ 80$$

$$\text{share of Girl} = \frac{4800}{120} \times 1 = ₹ 40$$

112. (D) Formula $\rightarrow \sqrt{xy}$

$$\Rightarrow \sqrt{9 \times 16}$$

$$= 12 \text{ m}$$

113. (C) $PR = \sqrt{PM^2 + MR^2} = \sqrt{36 + 64} = 10 \text{ cm}$

$$PQ = \sqrt{QR^2 - PR^2} = \sqrt{(26)^2 - (10)^2} = 24 \text{ cm}$$

$$\therefore \text{ar}(\Delta PQR) = \frac{1}{2} \times (PR) \times (PQ)$$

$$= \frac{1}{2} \times 10 \times 24 = 120 \text{ cm}^2$$

114. (A) Area of walls = $2(l + b) \times h$

$$= 2(8 + 6) \times 3 = 84 \text{ m}^2$$

Area of two windows and a door

$$= 2\left(1 \frac{1}{2} \times 1\right) + \left(2 \times 1 \frac{1}{2}\right) = 6 \text{ m}^2$$

$$\therefore \text{Area to be covered} = 84 - 6$$

$$= 78 \text{ m}^2$$

\therefore Area of paper = Area to be covered = 78

\Rightarrow (length \times breadth) of paper = 78

$$\Rightarrow \text{length of paper} = \frac{78}{50} \times 100 \text{ m}$$

$$= 156 \text{ m}$$

$$\therefore \text{cost} = \frac{156 \times 25}{100} = ₹ 39$$

115. (B) Area of large cube = $6(5)^2$

$$= 150 \text{ (unit)}$$

$$\text{Area of cuboid} = 2(1 \times 1 + 1 + 125 + 125 \times 1)$$

$$= 502 \text{ sq. units}$$

\therefore Percentage increase in surface area

$$= \frac{502 - 150}{150} \times 100 = 234 \frac{2}{3} \%$$

116. (D) $\sec 17^\circ - \sin 73^\circ$

$$= \sec 17^\circ - \sin(90^\circ - 17^\circ)$$

$$= \sec 17^\circ - \cos 17^\circ = \frac{1}{\cos 17^\circ} - \cos 17^\circ$$

$$= \frac{1 - \cos^2 17^\circ}{\cos 17^\circ} = \frac{\sin^2 17^\circ}{\cos 17^\circ} = \frac{\frac{x^2}{y^2}}{\sqrt{1 - \frac{x^2}{y^2}}}$$

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

117. (B) $2^{32} - (2+1)(2-1)(2^2+1)(2^4+1)(2^8+1)(2^{16}+1)$

$$2^{32} - (2^2-1)(2^2+1)(2^4+1)(2^8+1)(2^{16}+1)$$

$$2^{32} - (2^4-1)(2^4+1)(2^8+1)(2^{16}+1)$$

$$2^{32} - (2^8-1)(2^8+1)(2^{16}+1)$$

$$2^{32} - (2^{32}-1) = 1$$

118. (D) Divided by $x \rightarrow$

$$\frac{x^4}{x} + \frac{1}{x^2 \times x} = \frac{x^3 + \frac{1}{x^3}}{x^3}$$

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

$$\Rightarrow \frac{110}{2} = 55$$

119. (A) Let the fraction be = $\frac{100}{100}$

ATQ,

$$\frac{140}{200} \times \frac{16}{7}$$

$$\therefore \text{Original fraction} = \frac{5}{8}$$

120. (B) $20\% \rightarrow \frac{1}{5}$, $15\% \rightarrow \frac{3}{20}$

Before discount After discount

$$\frac{5}{20} \quad \text{---} \quad \frac{4}{17}$$

$$\frac{100}{100} \quad \text{---} \quad \frac{68}{68}$$

$$\downarrow \times 6 \quad \quad \downarrow \times 6$$

$$\boxed{₹600}$$

$$₹408$$

121. (B) ₹ 4960 is the amount of 3 years at rate of 3% annually, then

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$$x + \frac{x \times 8 \times 3}{100} = 4960 \text{ or, } \frac{124x}{100} = 4960$$

$$\therefore x = \frac{4960 \times 100}{124} = 4000$$

\therefore Initial value of cow = 3000 + 4000 = ₹ 7000

122. (A) Let initial investment = 3x, 5x and 7x
After one year (3x - 45600) : 5x : 7x + 337600

New Ratio \rightarrow 24 : 59 : 167

$$\frac{3x - 45600}{5x} = \frac{24}{59}$$

$$x = 47200$$

\therefore initial investment of Bhim
= 47200 \times 3 = 141600

123. (A) Let the downstream and upstream speed be 3x and 5x.

speed of the current = $3 \frac{3}{4}$ km/hr

$$\Rightarrow \frac{5x - 3x}{2} = \frac{15}{4} \text{ km/hr}$$

$$\Rightarrow x = \frac{15}{4} \text{ km/hr}$$

\therefore Speed of the boat in still water

$$= \frac{5x + 3x}{2} = 4x$$

$$= \frac{4 \times 15}{4} \text{ km/hr} = 15 \text{ km/hr}$$

124. (A) Let the number of filling pipes = x

\therefore outlet pipes = (8 - x)

ATQ,

$$= \frac{x}{12} - \frac{8 - x}{36} = \frac{1}{3}$$

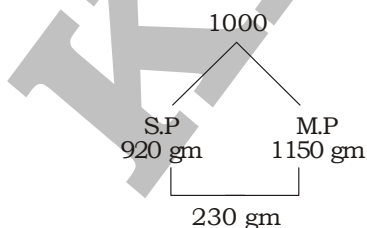
$$= \frac{3x - 8 + x}{36} = \frac{1}{3} \Rightarrow 4x - 8 = 12$$

$$\Rightarrow 4x = 20$$

$$\Rightarrow x = 5$$

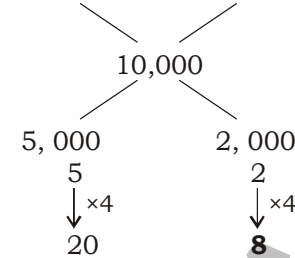
Number of filling pipes = 5

125. (C) Let the cost price be



$$\therefore \text{Profit \%} = \frac{230}{920} \times 100 = 25\%$$

126. (B) Teaching staff 12,000 Non Teaching 5,000



127. (D) $\frac{AE}{EB} = \frac{4}{5} = \frac{AD}{DC}$ (I) ($DE \parallel CB$)

Again,

$$\frac{AN}{NE} = \frac{AD}{DC} = \frac{4}{5} \quad (DN \parallel CE)$$

$$1 + \frac{AN}{NE} = 1 + \frac{4}{5} \Rightarrow \frac{9}{5}$$

$$\frac{AN + NE}{NE} = \frac{9}{5}$$

$$\frac{AE}{NE} = \frac{9}{5} \quad \text{..... (II)}$$

Divide (I) and (II)

$$\frac{AE}{EB} = \frac{4}{5}$$

$$\frac{NE}{EB} = \frac{4}{9}$$

128. (D) $\angle DCK = \angle FDG$
= 55° (corresponding)

$$\therefore \angle ACE = \angle DCK = 55^\circ \text{ (vertically opposite)}$$

$$\text{So, } \angle AEC = 180^\circ - (40^\circ + 55^\circ) = 85^\circ$$

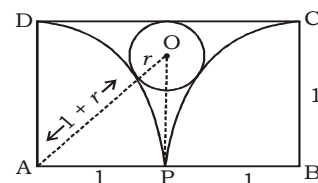
$$\therefore \angle HAB = \angle AEC = 85^\circ \text{ (corresponding)}$$

Hence, $x = 85^\circ$

129. (B) Let radius of the circle is 'r' units

OP = (1 - r), OA = (1 + r) and AP = 1

In $\triangle AOP$; $OA^2 = AP^2 + OP^2$



$$\Rightarrow (1 + r)^2 = 1^2 + (1 - r)^2$$

$$\Rightarrow r = \frac{1}{4} \text{ units}$$

$$\therefore \text{Area of smaller circle} = \pi \left(\frac{1}{4}\right)^2$$

$$= \frac{\pi}{16} \text{ square units}$$

$$\text{Sum of the area of the quarter circles} = \frac{\pi}{4}$$

$$+ \frac{\pi}{4} = \frac{\pi}{2} \text{ square units}$$

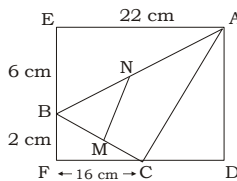
Area of shaded region

$$= 2 - \left(\frac{\pi}{16} + \frac{\pi}{2}\right)$$

$$= 2 - \frac{9}{16}\pi$$

$$= 2 - \frac{9}{16} \times \frac{22}{7} = \frac{13}{56} \text{ sq. units}$$

130. (B)



$$AC^2 = CD^2 + AD^2$$

$$= 6^2 + 8^2 = 100$$

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

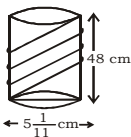
$$MN = \frac{1}{2} AC = \frac{1}{2} \times 10 = 5 \text{ cm}$$

(By mid point theorem)

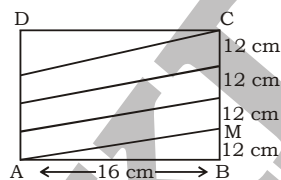
131. (A) Let the value of x & y be 1

$$\therefore \text{Required answer} = (1)^2 + (1)^2 = 2$$

132. (D)



The above figure, will look like the figure (below), when we open it.



The base circumference

$$= 2\pi r = 2 \times \frac{22}{7} \times \frac{56}{11} \times \frac{1}{2}$$

$$= 16 \text{ cm}$$

\therefore AM = length of one complete

$$\text{turn} = \sqrt{16^2 + 12^2}$$

$$= 20 \text{ cm}$$

$$\therefore \text{Total length} = 4 \times 20 = 80 \text{ cm}$$

133. (A) $2 \sin \alpha + 15 \cos^2 \alpha = 7$

$$\Rightarrow 2 \sin \alpha + 15(1 - \sin^2 \alpha) = 7$$

$$\Rightarrow 2 \sin \alpha + 15 - 15 \sin^2 \alpha = 7$$

$$\Rightarrow 15 \sin^2 \alpha - 2 \sin \alpha - 8 = 0$$

$$\Rightarrow 15 \sin^2 \alpha - 12 \sin \alpha + 10 \sin \alpha - 8 = 0$$

$$\Rightarrow 3 \sin \alpha (5 \sin \alpha - 4) + 2 (5 \sin \alpha - 4) = 0$$

$$\Rightarrow (3 \sin \alpha + 2) (5 \sin \alpha - 4) = 0$$

$$\Rightarrow \sin \alpha = \frac{4}{5}$$

$$\therefore \text{cosec } \alpha = \frac{5}{4}$$

$$\cot \alpha = \sqrt{\text{cosec}^2 \alpha - 1} = \sqrt{\frac{25}{16} - 1} = \sqrt{\frac{9}{16}} = \frac{3}{4}$$

134. (D) Let the number of students be x then we have,

$$\frac{x}{2} - 5 = \frac{x}{3} - 2$$

$$\Rightarrow \frac{x}{2} - \frac{x}{3} = 3$$

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

$$\Rightarrow x = 18$$

So, the number of students = 18

135. (C) Ist student 30% failed by 96 marks.

IInd student gets 45% passed by 24 marks more

$$\therefore 15\% \rightarrow 120 \text{ marks}$$

$$\text{Total marks} = 800$$

$$\text{Passing marks} = 240 + 96$$

$$= 336$$

$$\text{pass \%} = \frac{336}{800} \times 100 \Rightarrow 42\%$$

136. (C) The minute hand complete one revolution in 60 minute.

$$\therefore \text{In 50 minute it will cover } \frac{50}{60} = \frac{5}{6}$$

of the revolution.

$$\therefore 1 \text{ revolution} = 2\pi \text{ radian.}$$

$$\therefore \frac{5}{6} \text{ revolution} = 2\pi \times \frac{5}{6} = \frac{5\pi}{3} \text{ radian}$$

$$\therefore \text{Distance moved by tip} = 3 \times \frac{5\pi}{3} \text{ cm}$$

$$= 5\pi \text{ cm}$$

$$= 5 \times \frac{22}{7} \text{ cm} = 15.71 \text{ cm}$$

137. (B) $\frac{5x}{x} - \frac{3}{x} + \frac{5y}{y} - \frac{3}{y} + \frac{5z}{z} - \frac{3}{z} = 0$

$$5 + 5 + 5 - 3\left(\frac{1}{x} + \frac{1}{y} + \frac{1}{z}\right) = 0$$

$$\left(\frac{1}{x} + \frac{1}{y} + \frac{1}{z}\right) = 5$$

138. (D) Take $\alpha = 0^\circ$

$$\therefore u_1 = 1^\alpha = 0^\circ = 1^0$$

$$\therefore u_6 = 1^6 = 6 \text{ \& } u_4 = 1^4 = 4$$

$$\therefore 2u_6 - 3u_4 + 1 = 2 \times 6 - 3 \times 4 + 1 = 0$$

139. (A) Let the total no of students be 100

then failed students in computer = 100 - 28 = 72

fail students in commerce = 100 - 13 = 87

Student only failed in computer = 72 - 62 = 10

Student only failed in commerce = 87 - 62 = 25

fail in both subjects = 62

Total failed students = 62 + 25 + 10 = 97

\therefore Pass students = 100 - 97 = 3

only in computed no of pass students =

$$\frac{10}{3} \times 9 = 30$$

140. (B) Let $\theta = 0^\circ$, then

$$m = a \text{ and } n = 0$$

$$(m+n)^{\frac{2}{3}} + (m-n)^{\frac{2}{3}} = a^{\frac{2}{3}} + a^{\frac{2}{3}}$$

$$= 2a^{\frac{2}{3}}$$

141. (A) Put the value of x , y and z as 1, 8 and 27 respectively

ATQ,

$$(1 + 8 - 27)^3 + 27 \times 1 \times 8 \times 27$$

$$= (-18)^3 = 3^3 \times 2^3 \times 3^3$$

$$= (-18)^3 + (18)^3 = 0$$

142. (B) $(a + b + c)^2 = a^2 + b^2 + c^2 + 2(ab + ac + bc)$

$$\text{or, } 2^2 = a^2 + b^2 + c^2 + 2(-1)$$

$$\therefore a^2 + b^2 + c^2 = 6$$

$$(a + b)^2 + (b + c)^2 + (c + a)^2$$

$$= 2(a^2 + b^2 + c^2 + ab + ac + bc)$$

$$= 2(6 - 1) = 10$$

143. (B) Harender invest

$$= (700 \times 3) \times \left(700 \times \frac{5}{7} \times 3\right) + \left(500 + 200 \times \frac{3}{5}\right) \times 6$$

$$\text{Bhim invest} = 600 \times 12 = ₹ 7200$$

$$\text{Harender's share} = \frac{7320}{14520} \times 726 = 366$$

144. (A) Let the speed of the train be x km/h
speed of the man = 6 km/h (given)

\therefore Both are moving in the same direction

$$\therefore \text{Relative Speed} = (x - 6) \text{ Km/h}$$

$$\text{we know } \Rightarrow t = \frac{d}{v} \Rightarrow 45 = \frac{450 \times 18}{(x - 6) \times 5}$$

$$5x - 30 = 180 \Rightarrow 5x = 210$$

$$x = 42 \text{ km/h}$$

\therefore The trains reaches next station after 1 hour then it will travel 42 km in next one hour. To cover the same distance time taken by the man

$$t = \frac{d}{v} = \frac{42}{6} = 7 \text{ h}$$

145. (C) Cost price of article = ₹ 400

$$\text{Marked price} = 400 \times \frac{(100 + 80)}{100} = ₹ 720$$

Selling price after discount

$$= 720 \times \frac{(100 - 15)}{100}$$

$$= \frac{720 \times 85}{100}$$

CP	:	SP
400	:	612
$\xrightarrow{+212}$		

$$\text{Profit \%} = \frac{212}{400} \times 100 = 53\%$$

146. (B) Ritu : Priti

Efficiency \rightarrow 5 : 4

$$\left[25\% = \frac{1}{4}\right]$$

ATQ,

Priti takes 25 days to complete the

work then total work = 4 \times 25

= 100 units

Last 5 days Ritu and Priti work together.

Then 5 days work = 5 \times (5 + 4) = 45 units

Remaining work = 100 - 45 = 55 units

$$\text{Time taken by Ritu} = \frac{55}{5} = 11 \text{ days}$$

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147. (B) Total weight of 5 persons = 190 kg
Weight of Boat and 5 persons = 52×06
= 312 kg
 \therefore Weight of $\Rightarrow 312 - 190$
Boat = 122 kg
148. (C) Production in 1993-94 = 600 tonnes
Production in 1997-98 = 1200 tonnes
% increase in production
 $= \frac{1200 - 600}{600} \times 100 = 100\%$
149. (D) Production in 1996-97 = 1000 tonnes
Production in 1992-93 = 400 tonnes
% increase = $\frac{1000 - 400}{400} \times 100$
 $= \frac{600}{400} \times 100 = 150\%$
150. (D) Production in 1994-95 = 900
Production in 1995-96 = 800
% decrease = $\frac{900 - 800}{900} \times 100$
 $= \frac{100}{900} \times 100 = 11\frac{1}{9}\%$
151. (D) 'encroach' will take 'on/upon' after it
'encroach on something' means 'to begin to affect or use too much of somebody's rights'.
152. (C) Possessive adjective used for the subject 'one' should be 'one's'. Replace 'his' by 'one's'.
153. (A) Since the subject is plural, replace 'kind' by 'kinds'.
154. (A) Place an article 'a' before a singular countable noun 'rainy day'.
155. (C) Remove 'will' as it is not used in 'if clause'.
156. (C) You assure (to tell someone in a very strong or definite way) someone of something.
174. (D) 'Just' an adverb comes after the helping verb and before the main verb.
175. (A) The formation of conditional sentence is -
If + sub + had + V_3 , sub + would have + V_3 .
178. (C) 'Between' is used for two.
179. (B) Read 'I will write' into 'I will have written'
181. (C) The sentence is not a question. 'Was' will come after the subject 'Kohli'.

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MEANINGS IN ALPHABETICAL ORDER

Word	Meaning in English	Meaning in Hindi
Absolute	Not limited or restricted	असीम
Accorded	to give (something such as special treatment or status) to someone	नवाज़ना
Agnosticism	The belief that it is not possible to know whether God exists or not.	वह सिद्धांत जो ईश्वर के अस्तित्व के बारे में अज्ञान हो
Alliteration	The use of the same letter or sound at the beginning of words that are close together	अनुप्रास
Anglomaniac	One who has extremely strong admiration for England or English customs.	वह जो अंग्रेजों एवं उनकी परम्पराओं का समर्थक हो
Assure	To make something certain to happen	आश्वस्त करना
Atheism	Disbelief or lack of belief in the existence of God or gods.	नास्तिकता
Barren	Not producing anything useful or successful	अनउपजाऊ, बंजर
Client state	A country which depends on a larger and more powerful country for support and protection.	वह देश जो दूसरे विकसित एवं शक्तिशाली देशों पर संरक्षण/समर्थन के लिए निर्भर हो
Diminutive	Very small	अति छोटा
Disarmament	The reduction or withdrawal of military forces and weapons	निरस्त्रीकरण
Doorway	An entrance to a room or building through a door	प्रवेश द्वार
Endow	to give	प्रदान करना
Enigmatic	Mysterious and difficult to understand	गूढ़, रहस्यपूर्ण
Fecund	Producing new and useful things	उपजाऊ
Fragrant	Having a pleasant smell	खुशबूदार
Haemophiliac	A person who suffers from severe loss of blood from even a slight injury because the blood fails to clot normally.	साधारण चोट से भी खून आने की वंशानुगत प्रवृत्ति
Honorary	(Of a position in an organization) not paid	अवैतनिक
Hustler	a person who tries to trick somebody into giving them money	ठग
Inebriate	A chronic drinker	मदहोश, शराबी
Lascivious	Feeling or showing strong sexual desire	कामुक
Lolita	A very young seductive girl	वह नवयुवती जो आकर्षक हो
Mawkish	Sentimental in a feeble way	अति भावुक
Pyromaniac	A person suffering from an obsessive desire to set fire to things.	वह व्यक्ति जिसे आग लगाने की सनक हो
Render	Provide or give (a service, help, etc.)	देना
Short-sighted	Not considering what will or might happen in the future	जो दूरदर्शी ना हो
Sonnet	A poem that has 14 lines, each containing 10 syllables, and a fixed pattern of rhyme.	चौदह पंक्तियों की कविता
Stupefied	Shocked or surprised	आश्चर्यचकित
Theism	The doctrine or belief in the existence of a God or gods	ईश्वरवाद
Threshold	A strip of wood, metal, or stone forming the bottom of a doorway and crossed in entering a house or room/ a point or level at which something begins	चौखट, शुरुआत
Trace	Indication of the existence or passing of something	निशानी, सुराग
Transcending	to be or go beyond the usual limits of something	के पार



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CPO MOCK TEST – 17 (ANSWER KEY)

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

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