

CPO MOCK TEST – 25 (SOLUTION)

1. (D) A marathon is a long race and hibernation is a long period of **sleep**.
2. (C) A window has its cover called panes and a book has **cover**.
3. (B) We use a cup to have a coffee and bowl to have **soup**.
4. (B) A yard is a bigger unit of measurement of length than an inch (a yard contains 36 inches).
A quart is a bigger unit of measurement of weight than an ounce (a quart contains 32 ounces).
5. (A) An optimist expects good things to happen. While a pessimist lacks hope for the future. A pessimist is a person whose outlook is **gloomy**.
6. (C) A lizard is a type of reptile and a **daisy** is a type of flower.
7. (A) The relationship is $(x) : (x^3 + x^2) / 4$
= 6: (216 + 36) / 4 = 6 : 63
and 4 : (64 + 16) / 2 = 4 : **20**
8. (C) The relationship is $x^2 : (x + 1)$
= $11^2 : (11 + 1) :: 5^2 : (5 + 1) \Rightarrow 121 : 12 :: 25 : 6$
9. (B)
10. (A)
11. (A) In all except **seminar**, 'semi' indicates 'half'.
12. (C) All except **sodium** are radio isotopes, while sodium is a metal.
13. (B) All except **eczema** are related to eyes, while eczema is a skin infection.
14. (B) All except **Bridge** are different suits of a pack of card whereas bridge is a card game.
15. (D) All except **cortes** are currencies, while cortes is parliament of Spain.
16. (A) In each number except **751**, the difference of first and third digit is the middle one.
17. (C) Except **119**, others are prime numbers.

18. (D) After including the vowels, we can find the name of the months i.e. **April, May, August**. Whereas in **January** we have to include some consonant also i.e. 'N'.
19. (A) Triangle 1 $\rightarrow 3^2 = 9$ and $4^2 = 16$ hence 916
Triangle 2 $\rightarrow 2^2 = 4$ and $5^2 = 25$ hence 425
Similarly, $1^2 = 1$ and $7^2 = 49$
Hence, 149 is the right answer.
20. (B) The letters are the first letter of counting numbers i.e. one, two, three, four, five etc. So, '**O**' is the right answer
21. (C)
22. (B)

N	U	M	E	R	A	L
1	2	3	4	5	6	7
U	E	A	L	R	M	N
2	4	6	7	5	3	1

Similarly,

A	L	G	E	B	R	A
1	2	3	4	5	6	7
L	E	R	A	B	G	A
2	4	6	7	5	3	1
23. (D) All the words except "**MOUTH**" are palindromes (reads the same from backward as well as forward).
24. (B)
25. (B)
26. (B) Positions of the vowels A, E, I, O, and U are 1, 5, 9, 15 and **21** respectively.
27. (A)
28. (C) Here is how we get the sequence
 $1049760 / 58320 = 18$
 $58320 / 3888 = 15$
 $3888 / 324 = 12$
 $324 / 36 = 9$
 $36 / 6 = 6$
 Then, $6 / ? = 3$
 $\Rightarrow ? = 6 / 3 = 2$
29. (D) **PANDA, TOAD** and **DONKEY** are the animals which can be formed after including the vowels.
APPLE can also be formed after including vowels A & E but **Apple** is not an animal.

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30. (A) Number of letters in the spelling of each digit i.e. Zero = 4, One = 3, Two = 3, Three = 5, Four = 4 and so on.

So, We have, **Ten = 3**

31. (A) Let the marks in Geography be G and History be H.

$$\text{Eq 1: } G + H = 160$$

$$\text{Eq 2: } G/3 = H/2$$

By the problem:

$$G = 160 - H$$

Therefore, putting the value of G in Eq 2:

$$(160 - H)/3 = H/2$$

$$\Rightarrow 320 - 2H = 3H$$

$$\Rightarrow 3H + 2H = 320$$

$$\Rightarrow 5H = 320$$

$$\Rightarrow H = \mathbf{64}$$

32. (A) Write the letters in four rows for example :

A E N D F N D
 F N N I R D E \Rightarrow A FRIEND IN NEED
 R D E S I I E IS A FRIEND IN DEED
 I I E A E N D

33. (B)  1. Doubt 2. True

34. (A)

35. (A) Given : S O I L D I S K
\$ 4 % 6 5 % \$ #

Then, S O L I D
\$ 4 6 % 5

36. (B) $J_o > K_i$ & C_a

$$K_i > S_a$$

$$K_i > S_a > N_a$$

$$C_a > S_a$$

So, Nancy is the shortest among all.

37. (B) The first person shook hands with 11 remaining people, the second person also shook hands with 11 people, but we count 10, as the hand shake with the first person has already been counted. Similarly add 9 for the third person, 8 for the fourth one & proceeding in this fashion we get:

$$11 + 10 + 9 + 8 + 7 + 6 + 5 + 4 + 3 + 2 + 1 = 66$$

So, 66 handshakes took place before the meeting and 66 after the meeting.

So, the total no of hand shakes is **132**.

Shortcut: Put $N = 12$ and $N(N - 1)$ is your answer $\Rightarrow 12(12 - 1) = \mathbf{132}$

38. (B) The antonyms is **excite**.

laze

unlax

recline

unwind

tranquilize

repose

39. (B)

Word	W	I	N	T	E	R	S	U	M	M	E	R	A	U	T	U	M	N
Position	23	9	14	20	5	18	19	21	13	13	5	18	1	21	20	21	13	14
	+2	+3	+4	+5	+6		+2	+3	+4	+5	+6		+2	+3	+4	+5	+6	
Given detail	23	11	17	24	10	24	19	23	16	17	10	24	1	23	23	25	18	20

40. (B)

1	2	3
4	5	6
7	8	9
ghi	jkl	mno
pqrs	tuv	wxyz

With the reference of given keypad, after pressing the digit 4 twice we will get 'H', the digit 3 twice we will get 'E', the digit 5 thrice we will get 'L' and so on.

After pressing the code in the given pattern we will get "HELLO FRIENDS".

41. (C) Using the correct symbols, we have the given expression as

$$20 + 8 - 8 \div 4 \times 2 = 20 + 8 - 2 \times 2$$

$$= 20 + 8 - 4 = \mathbf{24}$$

42. (C) The colour of the human blood is 'red'. As it is given that 'red' is called 'yellow'.

So, the colour of human blood is 'yellow'.

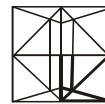
43. (D)

44. (A)

45. (C)



46. (B)

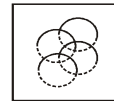


47. (A) 1, 4 and 7 are quadrilaterals.

2, 5 and 8 are three-dimensional figures.

3, 6 and 9 are triangles.

48. (C)



49. (C) The third figure in each row comprises the parts common to the first two figures.

50. (C)

51. (D) Iron was the only metal unknown to the Aryans during the early Vedic age. The advent of iron is generally associated with the late or post-Vedic ages. So blacksmith did not exist during this period.

53. (C) Anil Kaul has been appointed as the Managing Director of Tata Capital Housing.

- Tata Capital, a subsidiary of Tata Sons Limited

- Founded: 2007

- Headquarters: Mumbai, Maharashtra

57. (A) There are certain constitutional functions which the President has to perform with respect to Parliament. The President of India has the power to summon and prorogue either of the two Houses of Parliament or to dissolve the Lok Sabha. While the Rajya Sabha is a continuing body, the power to dissolve the Lok Sabha vests in the President.

59. (A) Pune is on the leeward side of the western ghats and so lies on a rain shadow area. The South-west monsoon empties all moisture on the windward side of the mountain range and reaches Pune with less moisture after crossing the mountain range. But Mumbai lies on the windward side and hence experiences heavy rainfall.
- 61(B) RBI to Issue New Design ₹ 100 Denomination Banknote.
- The new denomination has Motif of “RANI KI VAV” on the reverse, depicting the country’s cultural heritage.
 - The base colour of the note is Lavender.
 - Dimension of the banknote will be 66 mm × 142 mm.
65. (B) Rabi crops refer to agricultural crops sown in winter and harvested in the summer season. The term is derived from the Arabic word for “spring”, which is used in the Indian Subcontinent. Rabi season begins in autumn. The chief rabi crops are wheat, barley, gram, pulses, linseed and mustard.
67. (D) Schedules are lists in the Constitution that categorize and tabulate bureaucratic activity and policy of the Government.
First Schedule (Articles 1 and 4)- This lists the states and territories of India, lists any changes to their borders and the laws used to make that change.
Twelfth Schedule (Article 243-W) – It Municipalities urban local government.
71. (C) Muhammad Ali Jinnah died at the age of 71 in September 1948, just over a year after Pakistan gained independence from the British rule. He died from tuberculosis.
74. (B) Finance Bill means a Bill ordinarily introduced every year to give effect to the financial proposals of the Government of India for the next following financial year and includes a Bill to give effect to supplementary financial proposals for any period. The Finance Bill is introduced immediately after the presentation of the Budget. The introduction of the Bill cannot be opposed.
75. (A) Nearness to source of raw materials is one of the key factors that guide the establishment of such industries as iron, steel and other metal industries. Besides, they are also found near the coal mines which are used in smelting processes.
77. (B) Dear Money is also known as tight money. It is the money which has to be borrowed at a high interest rate and so restricts expenditure by companies. This situation can be a result of a restricted money supply, causing interest rates to be pushed up due to the forces of supply and demand. Business may have a tough time raising capital during a period of dear money.
78. (B) Nicholas Kaldor’s seminal work titled ‘An Expenditure Tax’ was brought out in 1955. Kaldor asked to levy a tax on a person’s expenditure (consumption), instead of on his income. When expenditure is made on the basis of taxation, the problems created by the non-comparability of various types of accruals of wealth resolves themselves. This was his major argument in favour of an expenditure tax.
- 79.(A) Union Cabinet has approved the signing of Memorandum of Understanding (MoU) amongst BRICS Nations on the Regional Aviation Partnership Cooperation.
80. (A) The Indian Constitution borrowed such features as parliamentary form of government, introduction of Speaker and his role, the concept of single citizenship, the Rule of law, procedure of law making etc from England. The Indian citizenship and nationality law and the Constitution of India provide single citizenship for all of India.
- 81.(B) CSIR- National Physical Laboratory (NPL) has signed a MoU with HPCL for indigenous development of petroleum certified reference materials (CRMs) under trade name of Bhartiya Niredeshak Dravyas.
82. (A) Nalanda was an ancient centre of higher learning in Bihar. It was a Buddhist centre of learning from the fifth or sixth century CE to 1197 CE. Nalanda flourished between the reign of the Sakraditya (whose identity is uncertain and who might have been either Kumara Gupta-I or Kumara Gupta-II) who was supported by patronage from the Hindu Gupta rulers as well as Buddhist emperors like Harsha and later emperors from the Pala Empire.
83. (B) Kishwar Desai is an Indian author. Her first novel ‘Witness the Night’ won the Costa Book Award in 2010 for Best First Novel. Her latest novel ‘Origins of Love’ was published in June 2012. Both novels feature a feisty Indian middle-aged social worker Simran Singh, who gets involved in social problems and tries to find a resolution.
84. (D) The Jaduguda Mine is a uranium mine in Jaduguda village in the Purbi Singhbhum district of the Indian state of

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- Jharkhand. It started operation in 1967 and was the first uranium mine in India. The deposits here were discovered in 1951. As of March 2012 India only possesses two functional uranium mines which also includes the Jaduguda Mine.
87. (D) Article 1 of the Constitution declares that India shall be a Union of States. The States and the territories thereof shall be as specified in the First Schedule and the territory of India shall comprise the territories of the States, the Union territories specified in the First Schedule and such other territories may be acquired.
88. (B) A Master of Computer Applications (MCA) is a postgraduate degree in computer application awarded in India. It is a three year (6 Semesters) course. The students entering MCA must have a bachelor degree with Mathematics as one of the subjects at higher secondary or graduation.
89. (D) The concept of opportunity cost is based on scarcity and choice. The opportunity cost of a commodity is the next best alternative commodity sacrificed. In other words, opportunity cost of a commodity is the opportunity to produce alternative goods and services. If one commodity is produced another commodity is sacrificed. So opportunity cost of producing a good is equal to the cost of not producing another commodity.
90. (C) The terabyte is a multiple of unit byte for digital information.
 $1 \text{ TB} = 10^{12} \text{ Bytes}$
 $= 1073741824 \text{ Kilobyte}$
 $= 1048576 \text{ MB} = 10^{12} \text{ Gigabytes}$
91. (C) An important function of the Reserve Bank of India is to act as Government banker, agent and adviser. The Reserve Bank is an agent of Central Government and of all State Governments in India except J&K. State Government transactions are carried out by RBI in terms of the agreement entered into with the State Governments by section 21A of the Reserve Bank of India Act. 1934.
92. (D) The presence of Mongoloid groups in North-East India had been attested as early as circa 500 BC in ancient Indian literature. The diverse Mongoloid groups which eventually settled in different habitats and ecological settings crystallized into distinct tribal societies.
93. (A) SBI has Organised Kisan Mela To Educate. SBI has covered 10 lakh farmers through nearly 14,000 rural and semi-urban branches across the country in this Kisan Mela.
94. (B) Finance Ministry has approved infusion of Rs 11,336 crore in 5 PSBs.
95. (B) Assembler is a computer program which is used to translate program written in Assembly Language into machine language. The translated program is called as object program.
97. (B) 'Sarfaroshi ki Tamanna' is a patriotic poem in Urdu written by Pandit Ram Prasad Bismil. He was an Indian Independence Movement leader known popularly with Kakori Train Robbery during British rule in India. The poem was written as an ode to young freedom fighters of the Indian independence movement. It has also been associated with the younger generation of inter-war freedom fighters such as Ashfaqullah Khan, Shaheed Bhagat Singh and Chandrashekhar Azad.
99. (B) Investment expenditure refers to the creation of new assets i.e. an addition to the stock of existing capital assets. According to Keynes, investment demand depends upon two factors -
 (a) Expected rate of profit - It is also called as Marginal Efficiency of Capital (MEC). Investment demand increases with the increase in the expected rate of profit.
 (b) The rate of interest (IR):- Investment demand decreases with the increase in the rate of interest.
101. (A) $100 \times 35 = 3500$
 $200 \times 5 = 1000$
 Total work = 4500
 $200 \times 5 = 100 \times x$
 10 days = x
 Total days = 35 + 10
 = 45 days
 Extra days = 45 - 40
 = 5 days
102. (C) Let the income of Ram = ₹ 100
 \therefore Expenditure on food = $100 \times \frac{25}{100} = ₹ 25$
 After increase of 20%, income = $100 \times \frac{120}{100}$
 = ₹ 120
 ATQ,
 Expenditure is same in both cases.
 \therefore expenditure = $\frac{25}{120} \times 100 = \frac{250}{12}$
 percentage expenditure = 20.833%
 percentage decrease in expenditure = 25 - 20.833
 ≈ 4.16%

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103. (D) Interest after 10 years at the rate of 5%
= ₹ 500

$$\therefore \text{Time} = \frac{\text{Interest} \times 100}{\text{Principal} \times \text{Rate}}$$

$$= \frac{500 \times 100}{1500 \times 5} = \frac{20}{3} \text{ years} = 6\frac{2}{3} \text{ years}$$

$$\therefore \text{Required time} = \left(10 + 6\frac{2}{3}\right) \text{ yrs.} = 16\frac{2}{3} \text{ y.rs}$$

104. (B) Let the required number be x . Then

$$x^2 + 5^2 = 386$$

$$\Rightarrow x^2 = 386 - 25$$

$$\Rightarrow x^2 = 361$$

$$\Rightarrow x = \sqrt{361} = 19$$

105. (B) Let the minimum score be x
maximum score = $x + 100$

$$\therefore 28 \times 38 + x + x + 100 = 30 \times 40$$

$$\Rightarrow 1064 + 2x + 100 = 1200$$

$$\Rightarrow 2x = 1200 - 1164 = 36$$

$$\boxed{x = 18}$$

106. (D) A → 12 days $\frac{12 \text{ units/day}}$
B → 16 days $\frac{9}{6}$
C → 24 days $\frac{6}{6}$
D → 36 days $\frac{4 \text{ units/day}}$
Total work units = 144

Work done on first day = 12 units

on second day = 12 + 9 = 21 units

on third day = 21 + 6 = 27 units

on fourth day = 27 + 4 = 31 units

on fifth day = 31 units and so on.

\therefore work done in five days = 91 + 31

= 122 units

Remaining work = 144 - 122 = 22 units

Total time = $5\frac{22}{31}$ days

107. (D) Required no. of students

\Rightarrow L.C.M of 6, 8, 12 and 16

= 96

108. (A) 1 cow : 1 calf

Old cost → 4000 : 2800

↓ +20% ↓ +30%

New Cost → 4800 3640

ATQ,

Price of 1 dozen cows = 4800 × 12 = 57600

Price of 2 dozen calves = 3640 × 24 = 87360

Total cost = 57600 + 87360 = ₹ 144960

109. (D) Simple interest of 2 years = 20%

Compound interest of 2 years = 21%

Diff. between simple and compound interest

= 1%

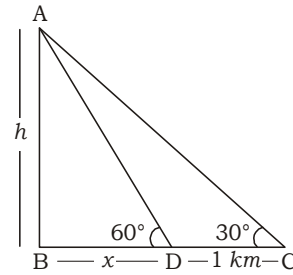
↓ × 130

130

\therefore Principal = 130 × 100

= ₹ 13000

110. (A)



Height of ballon = AB = h km

BD = x km, CD = 1 km

From $\triangle ABD$

$$\tan 60^\circ = \frac{AB}{BD}$$

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

$$x = \frac{h}{\sqrt{3}} \text{ km} \quad \dots(i)$$

From $\triangle ABC$

$$\tan 30^\circ = \frac{AB}{BC}$$

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

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

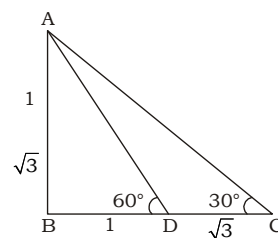
$$\Rightarrow \sqrt{3}h - \frac{h}{\sqrt{3}} = 1$$

$$\Rightarrow \frac{3h - h}{\sqrt{3}} = 1$$

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

$$h = \frac{\sqrt{3}}{2} \text{ km}$$

Short trick :-



In $\triangle ABC$,

$$\tan 30^\circ = \frac{AB}{BC}$$

$$\Rightarrow BC = \frac{AB}{\tan 30^\circ} = \sqrt{3} AB \quad \dots(ii)$$

$$\therefore BD = BC - CD = \sqrt{3} AB - 1 \quad \dots(ii)$$

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In $\triangle ABD$,

$$\tan 60^\circ = \frac{AB}{BD} = \frac{AB}{\sqrt{3}AB - 1}$$

$$\Rightarrow \sqrt{3} = \frac{AB}{\sqrt{3}AB - 1}$$

$$\Rightarrow 3AB - \sqrt{3} = AB$$

$$\Rightarrow 2AB = \sqrt{3}$$

$$\Rightarrow AB = \frac{\sqrt{3}}{2} \text{ km}$$

111. (B) S.I. = $\frac{6000 \times 5 \times 2}{100} = ₹ 600$

$$\text{C.I.} = 5000 \left[\left(1 + \frac{8}{100} \right)^2 - 1 \right]$$

$$= 5000 \left[\left(\frac{27}{25} \right)^2 - 1 \right]$$

$$= 5000 \left[\left(\frac{729 - 625}{625} \right) \right]$$

$$= 5000 \times \frac{104}{625} = ₹ 832$$

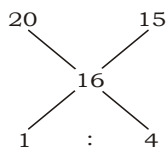
Difference = $832 - 600 = ₹ 232$

112. (D) $\sqrt{24010000} = 4900$

again $\sqrt{4900} = 70$

$\therefore \sqrt[4]{24010000} = 70$

113. (D) From alligation



\therefore Required ratio = 1 : 4

114. (A) Avg. Height = $\frac{6 \times 1.15 + 8 \times 1.10 + 6 \times 1.12}{20}$

$$= \frac{6.9 + 8.8 + 6.72}{20} = \frac{22.42}{20} = 1 \text{ m } 12.1 \text{ cm}$$

115. (A) P + Q \rightarrow 90 Minutes $\xrightarrow{2 \text{ units/min}}$
 Q + R \rightarrow 60 Minutes $\xrightarrow{3}$ (180) Total capacity (in units)
 P + R \rightarrow 45 Minutes $\xrightarrow{4 \text{ units/min}}$

$$\text{Efficiency of (P + Q + R)} = \frac{2 + 3 + 4}{2}$$

= 4.5 units/min

Efficiency of P = $(4.5 - 3) = 1.5$ units/min

Efficiency of Q = $(4.5 - 4) = 0.5$ units/min

Efficiency of R = $(4.5 - 2) = 2.5$ units/min

Required time for P = $\frac{180}{1.5} = 120$ min

Required time for Q = $\frac{180}{0.5} = 360$ min

Required time for R = $\frac{180}{2.5} = 72$ min

116. (B)

Initial	Present
100	103
40	41
20	21
80,000	88683
$\downarrow \times 2$	$\downarrow \times 2$
1,60,000	1,77,366

Hence, Present population = 1,77,366

117. (D) A : B : C : D

2	3	3	3
4	4	3	3
2	2	2	3
16	24	18	27
$\downarrow \times 60$	$\downarrow \times 60$	$\downarrow \times 60$	$\downarrow \times 60$
1440	1620	5100	85

Total B + D = ₹ 3060

118. (A) ATQ,

Work done by A in 1 day = Work done by B in 3 days

A	:	B
Time	1	3
Efficiency	3	1

Now total work = $3 \times 2 + 9 \times 1 = 15$ units

Required time for A to complete the work

$$= \frac{15}{3} = 5 \text{ days}$$

Required time for B to complete the work

$$= \frac{15}{1} = 15 \text{ days}$$

119. (A) A + B + C earns in one day = $\frac{2700}{18}$

= ₹ 150

A + C earns in one day = ₹ 94

B + C earns in one day = ₹ 76

\therefore earning of A = $150 - 76$

= ₹ 74

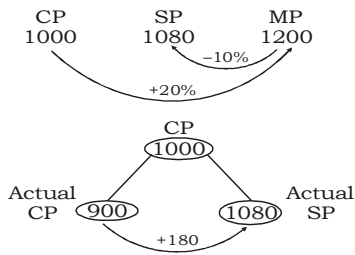
\therefore earning of C = $94 - 74$

= ₹ 20

120. (C) Let the initial price = ₹ 1000 the price of 1 gm weight is ₹ 1
 ATQ,

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$$\text{Percent profit} = \frac{180}{900} \times 100 = 20\%$$

121. (A)

	CP		SP
	(100 - Discount)	:	(100 + Profit)
	(100 - 4)		(100 + 35)
Total number of article	$\frac{96}{16}$:	$\frac{135}{15}$
Ratio of cost of 1 article	$\frac{6}{2}$:	$\frac{9}{3}$

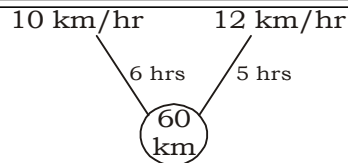
122. (C) Let the speeds of the policeman and thief respectively are $5x$ and $4x$ km/hr
 \therefore Relative speed = $5x - 4x = x$ km/hr
 \therefore Time taken to catch the thief = $\frac{100}{x}$ hours

$$\therefore \text{Distance covered by the thief} = \frac{100}{x} \times 4x = 400 \text{ metres}$$

123. (A) $\therefore \frac{1}{x+y} = \frac{1}{x} + \frac{1}{y} = \frac{y+x}{xy}$
 $\Rightarrow (x+y)^2 = xy$
 $\Rightarrow x^2 + 2xy + y^2 = xy$
 $\Rightarrow x^2 + xy + y^2 = 0$
 $\therefore x^3 - y^3 = (x-y)(x^2 + xy + y^2) = 0$

124. (C) \therefore S.P. of house and shop is same.
 \therefore loss percent in the transaction = $\frac{x^2}{100} = \frac{(20)^2}{100} = 4\%$
 $4\% = \frac{1}{25} \rightarrow$ loss
 \therefore SP = $25 - 1 = 24$
 Ratio of loss to S.P = $1 : 24$
 given SP of both house and shop = 2 lakh
 24 units = 2
 $1 \text{ unit} = \frac{2}{24} = \frac{1}{12}$
 \therefore loss = ₹ $\frac{1}{12}$ lakh

125. (C) Let the required distance = LCM of (10, 12) = 60 kms



$$\therefore \text{Difference in time} = 6 - 5 = 1 \text{ hour} = 60 \text{ minutes}$$

given difference in time = $6 + 6 = 12$ minutes
 $\therefore 60 \rightarrow 12$
 Hence, the required distance = 12 km

126. (D) Cost price at which the retailer bought T.V.

$$= 6400 \times \frac{3}{4} \times \frac{17}{20} = 4080$$

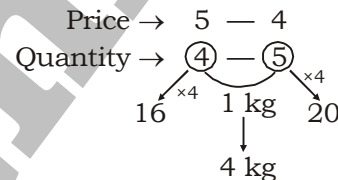
Hence,

$$\frac{9}{10} \times \text{new MRP} = \frac{6}{5} \times 4080$$

$$\text{New MRP} = \frac{6}{5} \times \frac{10}{9} \times 4080$$

$$= \frac{4}{3} \times 4080 = ₹ 5440$$

127. (A) $20\% = \frac{1}{5}$



$$\text{Original price} = \frac{240}{16} = ₹ 15/\text{kg}$$

$$\text{Reduced price} = \frac{240}{20} = ₹ 12/\text{kg}$$

128. (C) Relative speed = $45 - 40 = 5$ km/hr

$$\therefore \text{Required distance} = \left(5 \times \frac{45}{60}\right) \text{ km} = \frac{15}{4} \text{ km} = 3 \text{ km } 750 \text{ metre.}$$

129. (A) $\therefore a = \frac{xy}{x+y}$, $b = \frac{xz}{x+z}$ and $c = \frac{yz}{y+z}$

$$\therefore \frac{x+y}{xy} = \frac{1}{a}, \frac{x+z}{xz} = \frac{1}{b}, \frac{y+z}{yz} = \frac{1}{c}$$

$$\text{or, } \frac{1}{y} + \frac{1}{x} = \frac{1}{a}, \frac{1}{z} + \frac{1}{x} = \frac{1}{b}, \frac{1}{z} + \frac{1}{y} = \frac{1}{c}$$

$$\therefore \left(\frac{1}{y} + \frac{1}{x}\right) + \left(\frac{1}{z} + \frac{1}{x}\right) - \left(\frac{1}{z} + \frac{1}{y}\right) = \frac{1}{a} + \frac{1}{b} - \frac{1}{c}$$

$$\text{or, } \frac{2}{x} = \frac{bc + ca - ab}{abc}$$

$$\text{or, } x = \frac{2abc}{bc + ca - ab}$$

130. (A) $2x - \frac{1}{2x} = 6$

$\Rightarrow 2\left(x - \frac{1}{4x}\right) = 6$

$\Rightarrow x - \frac{1}{4x} = 3$

Squaring, $x^2 + \frac{1}{16x^2} - 2x \cdot \frac{1}{4x} = 9$

or, $x^2 + \frac{1}{16x^2} = 9 + \frac{1}{2} = \frac{19}{2}$

131. (A) $a^3 + b^3 + c^3 - 3abc$

$= (a + b + c) \frac{1}{2} \left\{ (a - b)^2 + (b - c)^2 + (c - a)^2 \right\}$

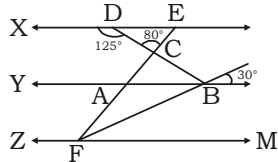
$= (258 + 260 + 262) \frac{1}{2} \left\{ (-2)^2 + (-2)^2 + 4^2 \right\}$

$= (780) \frac{1}{2} \times 24 = 780 \times 12 = 9360$

132. (B) $\angle CDE = 180^\circ - 125^\circ = 55^\circ$

In $\triangle DCE$, $\angle CED = 180^\circ - 55^\circ - 80^\circ = 45^\circ$

and $\angle B = \angle BFM = 30^\circ$ (corresponding angle)



From figure,

$\angle DEF = \angle EFM$ (Alternate angle)

$\Rightarrow \angle EFM = 45^\circ$

$\Rightarrow \angle EFB + \angle BFM = 45^\circ$

$\Rightarrow \angle EFB = 45^\circ - 30^\circ$

$\Rightarrow \angle AFB = 15^\circ$

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

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

or, $15\sin^2\alpha - 2\sin\alpha - 8 = 0$

solving, $\sin\alpha = \frac{4}{5}$

$\therefore \cot\alpha = \frac{3}{4}$

134. (C) Here, area $\triangle AMN = \frac{1}{2}$ (area $\triangle ABC$)

or, $\frac{\text{area of } \triangle AMN}{\text{area of } \triangle ABC} = \frac{1}{2}$

or, $\left(\frac{AM}{AB}\right)^2 = \frac{1}{2}$

or, $\sqrt{2} AM = AB$

or, $\sqrt{2} AM = (AM + MB)$

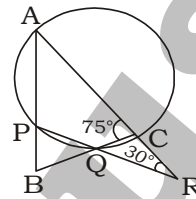
or, $(\sqrt{2} - 1) AM = MB$

or, $\frac{AM}{BM} = \frac{1}{\sqrt{2} - 1}$

or, $\frac{AM}{BM} = \frac{1}{\sqrt{2} - 1} \times \frac{\sqrt{2} + 1}{\sqrt{2} + 1}$

$\therefore AM : BM = (\sqrt{2} + 1) : 1$

135. (D) \therefore Sum of opposite angles of a cyclic quadrilateral are equal.



$\therefore \angle ACQ + \angle APQ = 180^\circ$

$\Rightarrow 75^\circ + \angle APQ = 180^\circ$

$\Rightarrow \angle APQ = 105^\circ$

$\therefore \angle APQ + \angle BPQ = 180^\circ$

$\therefore 105^\circ + \angle BPQ = 180^\circ$

or, $\angle BPQ = 180^\circ - 105^\circ = 75^\circ$

$\therefore \angle ACQ$ is an exterior angle of $\triangle RCQ$

$\therefore \angle ACQ = \angle CRQ + \angle COR$

$\Rightarrow 75^\circ = 30^\circ + \angle COR$

$\Rightarrow \angle COR = 45^\circ$

In $\triangle BPQ$, $\angle B = 180^\circ - 75^\circ - 45^\circ = 60^\circ$

136. (B) $\therefore a^3 - b^3 = (a - b)(a^2 + b^2 + ab)$

$\therefore 56 = 2(a^2 + b^2 + ab)$

$\Rightarrow 28 = a^2 + b^2 + ab = (a - b)^2 + 3ab$

$\Rightarrow 28 = 4 + 3ab$

$\Rightarrow ab = 8$

Now, $a^2 + b^2 = (a - b)^2 + 2ab = 2^2 + 2 \times 8 = 20$

137. (D) In $\triangle ABC$, $\tan A = \frac{BC}{AC} = \frac{u}{v}$, $\tan B = \frac{v}{u}$

Also, $u^2 + v^2 = w^2$ (Pythagoras theorem)

$\therefore \tan A + \tan B = \frac{u}{v} + \frac{v}{u} = \frac{u^2 + v^2}{vu} = \frac{w^2}{uv}$

138. (A) Expression = $\frac{8 \sin \theta + 5 \cos \theta}{\sin^3 \theta + 2 \cos^3 \theta + 3 \cos \theta}$

Dividing numerator and denominator by $\cos \theta$,

$= \frac{8 \tan \theta + 5}{\tan \theta \cdot \sin^2 \theta + 2 \cos^2 \theta + 3}$

$= \frac{8 \tan \theta + 5}{2 \sin^2 \theta + 2 \cos^2 \theta + 3}$ ($\because \tan \theta = 2$)

$= \frac{8 \times 2 + 5}{2(\sin^2 \theta + \cos^2 \theta) + 3} = \frac{21}{5}$

139. (C) Volume of solid cylinder = $\pi r^2 h$

Volume of cone = $\frac{1}{3} \pi r^2 h$

$$\begin{aligned} \text{Difference} &= \pi r^2 h - \frac{1}{3} \pi r^2 h \\ &= \frac{2}{3} \pi r^2 h = \frac{2}{3} \times \frac{22}{7} \times 5 \times 5 \times 12 \\ &= 628.57 \text{ cu.cm.} \end{aligned}$$

140. (C) $\frac{\sin \theta + \cos \theta}{\sin \theta - \cos \theta} = \frac{5}{4}$

$$\Rightarrow \frac{\cos \theta \left(\frac{\sin \theta}{\cos \theta} + 1 \right)}{\cos \theta \left(\frac{\sin \theta}{\cos \theta} - 1 \right)} = \frac{5}{4}$$

$$\Rightarrow \frac{\tan \theta + 1}{\tan \theta - 1} = \frac{5}{4}$$

$$\Rightarrow 4 \tan \theta + 4 = 5 \tan \theta - 5$$

$$\Rightarrow \tan \theta = 9$$

$$\Rightarrow \frac{2 \tan \theta}{2} = \frac{5+4}{5-4}$$

(By componendo and dividendo)

$$\therefore \frac{\tan^2 \theta + 1}{\tan^2 \theta - 1} = \frac{(9)^2 + 1}{(9)^2 - 1} = \frac{81+1}{81-1}$$

$$= \frac{82}{80} = \frac{41}{40}$$

141. (A) Area of kite = Area of square + Area of equilateral triangle

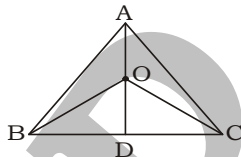
$$= \frac{1}{2} (\text{diagonal})^2 + \frac{\sqrt{3}}{4} \times (\text{side})^2$$

$$= \frac{1}{2} \times 32 \times 32 + \frac{\sqrt{3}}{4} \times 8 \times 8$$

$$= 512 + 16 \times 1.732$$

$$= 512 + 27.712 = 539.712 \text{ cm}^2$$

142. (C) BO is bisector of $\angle B$



$$\angle ODB = 90^\circ$$

$$\angle BOD = 15^\circ$$

$$\angle OBD = 180^\circ - 90^\circ - 15^\circ = 75^\circ$$

$$\angle ABC = 2 \times 75^\circ = 150^\circ$$

143. (B) $\triangle AOB \sim \triangle COD$

$$\frac{\text{ar}(\triangle AOB)}{\text{ar}(\triangle COD)} = \frac{AB^2}{CD^2} = \frac{(2CD)^2}{CD^2} = \frac{4CD^2}{CD^2} = 4 : 1$$

144. (D) $l + b + h = 24$ [given]

$$l^2 + b^2 + h^2 = 225$$
 [given]

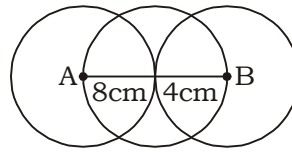
$$\therefore (l + b + h)^2 = l^2 + b^2 + h^2 + 2(lb + bh + hl)$$

$$\Rightarrow (24)^2 = 225 + 2(lb + bh + hl)$$

$$\Rightarrow 2(lb + bh + hl) = 576 - 225$$

$$= 351 \text{ sq. cm.}$$

145. (A)



$$\text{Diameter} = AB = 8 + 4 = 12 \text{ cm}$$

$$\text{Radius} = \frac{12}{2} = 6 \text{ cm}$$

$$\therefore \text{Area of circle} = \pi r^2 = \pi \times 6^2 = 36\pi \text{ sq. cm}$$

146. (C) Required answer

$$= \frac{35 \times 30}{100} + \frac{35 \times 15}{100} + \frac{35 \times 15}{100}$$

$$= \frac{35}{100} (30 + 15 + 15)$$

$$= \frac{35 \times 60}{100} = 21 \text{ lakhs}$$

147. (D) Percentage variation :

$$\text{Model A} \Rightarrow \frac{40 - 30}{30} \times 100 = 33 \frac{1}{3} \%$$

$$\text{Model B} \Rightarrow \frac{20 - 15}{15} \times 100 = 33 \frac{1}{3} \%$$

$$\text{Model C} \Rightarrow \frac{15 - 20}{20} \times 100 = -25 \%$$

148. (A) Required difference

$$= \frac{44 \times 20}{100} - \frac{35 \times 15}{100}$$

$$= \frac{880 - 525}{100} = \frac{355}{100} \text{ lakhs}$$

$$= 355000$$

149. (B) Required production

$$= \frac{44 \times 30}{100} \text{ lakhs}$$

$$= 132000$$

150. (C) Required difference

$$= 35 \times \frac{10}{100} \times \frac{15}{100} + 44 \times \frac{10}{100} \times \frac{15}{100}$$

$$= \frac{150}{10000} \times 79 = 1.1850 \text{ lakhs}$$

$$= 118500$$

MEANINGS IN ALPHABETICAL ORDER

Word	Meaning in English	Meaning in Hindi
Abject	Most unfortunate or miserable	दीन-हीन
Cessation	A stopping of some action, a pause or stop	विराम, अन्त
Chastise	To criticize (someone) harshly for doing something wrong	निंदा करना
Condemn	To say in a strong and definite way that someone or something is bad or wrong	दोषी ठहराना
Contagious	Easily diffused or spread as from one person to another	संक्रामक
Contingent	A military unit	सैन्यदल
Curator	A person who is in-charge of something	अध्यक्ष, निरीक्षक
Cynic	A person who has negative opinions about other people and about the things people do	निंदक
Denigration	To make (something) seem less important or valuable	निन्दा करना
Discourse	A long talk or piece of writing about a subject	संवाद
Dissipation	The process of slowly disappearing or becoming less	गायब होना
Elite	The people who possesses wealth and status in a society	संभ्रान्त, कुलीन
Entangle	To get (someone) involved in a confusing or difficult situation	फँसाना
Eulogies	A speech that praises someone who has died	गुणगान
Extricate	Release from entanglement of difficulty	मुक्त करना
Fastidious	Hard to please	तुनक मिजाज
Fickle	Changing often	अस्थिर
Flippant	Lacking proper respect or seriousness	अविनित, गम्भीर न होना
Foray	An initial attempt (especially outside your usual areas of competence)	प्रारंभिक प्रयत्न
Highbrow	A person who possesses or has superior intellectual interest and tastes	बुद्धिमान, उच्च वर्गीय
Hypocritical	Professing feelings or virtues one does not have	ढोंगी
Impertinence	The trait of being rude and impertinent; inclined to take liberties	धृष्टता
Infamy	A state of extreme dishonour	बदनामी
Intense	Very great in degree : very strong	गहन, तीव्र
Licentious	Lacking moral discipline; especially sexually unrestrained	अनैतिक, पतित
Maraud	To roam about and raid in search of plunder	लूटमार की खोज में फिरना
Metaphor	A figure of speech in which an expression is used to refer to something that it does not literally denote in order to suggest a similarity	रूपांतर
Misanthropist	Someone who dislikes people in general	मानवद्वेषी
Mycologist	A branch of biology dealing with fungi	कवक विज्ञानी
Palpable	Capable of being touched or felt	स्पर्शनीय
Perceptible	Easily seen or detected	स्पष्ट
Perceptive	Having or showing an ability to understand or notice something easily or quickly	सचेतन, अनुभव करने में सक्षम
Puerile	Silly or childish especially in a way that shows a lack of seriousness	बचकाना
Rap	A sharp blow or knock	खटखट
Rebuke	To speak in an angry and critical way to (someone)	डांटना
Reproof	Criticism or blame	निंदा, असहमति
Sepulchral	Very sad and serious, very dismal or gloomy	उदास, विषादमय
Steadfast	Not subject to change	अविचल, अडिग
Stoic	Seeming unaffected by pleasure or pain; impassive	भावहीन
Stunted	That has not been able to grow or develop as much as it should	अविकसित
Svelte	Thin in attractive or graceful way	कोमल, सुगठित
Tenacious	Very determined to do something	दृढ़
Warden	A person who is in-charge or take care of something	रक्षक, संचालक

CPO MOCK TEST - 25 (ANSWER KEY)

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

151. (A) Replace 'actor' by 'actors' as 'one of the' is always followed by a plural noun.
152. (B) Remove 'for' from part (B) to have a correct form of a sentence i.e. 'Emphasis on equality of life ensures the health and happiness of every individual'.
153. (A) Replace 'such hurry' by a phrase 'such a hurry'.
154. (B) Use 'how to play' instead of 'to play'.
155. (A) Remove 'two' as 'both of you' already means 'two' and here 'two' is making this sentence superfluous.

