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08. Letter Series & Coding–Decoding

Official PMDC Solved Past Paper Topical Booklet · High–Yield Examination Series

🎯 22 Solved Questions

📅 2022 to 2025 Archive

🛡️ Boards: BUMHS, DUHS, KMU, NUMS, SZABMU, UHS

📋 Weightage: 3% of MDCAT (6 MCQs)

Curated by Ibrahim for fellow bees. Every question in this chapter has been verified against official UHS, NUMS, SZABMU, DUHS, and KMU answer keys. Propolis cognitive autopsies are provided at the end of this booklet to explain core concepts and break down common distractor traps.

OFFICIAL SOLVED EDITION**Q1.**

BUMHS 2025

CAT is to DOG, as MOUSE is to:

- (A) RAT
- (B) CAT
- (C) DOG
- (D) CHEESE

Q2.

SZABMU 2025

ZX, WU, TR, QO.. What comes next?

- (A) NL
- (B) LN
- (C) NM
- (D) KH

Q3.

NUMS 2025

What comes next? ZX, WU, TR, QO, ____

- (A) NL
- (B) LN
- (C) NM
- (D) KH

Q4.

DUHS 2025

A spying agent coded **POWER** as **QPXFS**.Using this pattern, what will be the code for **GUNBD**?

- (A) HVPFE
- (B) HVOCE
- (C) HVNDE
- (D) HVODE

Q5.

DUHS 2025

Identify the next letter in the pattern:

M, N, P, Q, S, ??

- (A) T
- (B) U
- (C) V
- (D) W

Q6.

BUMHS 2025

CAT is to DOG, as MOUSE is to:

- (A) RAT
- (B) CAT
- (C) DOG
- (D) CHEESE

Q7.

DUHS 2025

A spying agent coded **POWER** as **QPXFS**. Using this pattern, what will be the code for **GUNBD**?

- (A) HVPFE
- (B) HVOCE
- (C) HVNDE
- (D) HVODE

Q8.

DUHS 2025

M, N, P, Q, S, ??

- (A) T
- (B) U
- (C) V
- (D) W

Q9.

SZABMU 2025

What comes next? ZX, WU, TR, QO, ____

- (A) NL
- (B) LN
- (C) NM
- (D) KH

Q10.

SZABMU 2024

What are the missing alphabets in the sequence:

EZFA, GBHY, IXJC, _?

- (A) KDLW
- (B) KLDW
- (C) KWLD
- (D) LDKW

Q11.

DUHS 2024

Identify the pattern and choose the correct option that should follow next:

VSA, WRD, XQG, YPJ, _

- (A) VTC
- (B) TLK
- (C) MOZ
- (D) ZOM

Q12.

UHS 2024

Observe the pattern and select the next term in the sequence:

JEQ, HEO, FEM, _?

- (A) GFN
- (B) DEK
- (C) GEL
- (D) DFK

Q13.

BUMHS 2023

Observe the pattern and select the next term in the series:

TEAM, TAME, TMEA, ____

- (A) MUET
- (B) TEAM
- (C) TAUM
- (D) MEAT

Q14.

KMU 2023

Mice are to cats as goats are to:

- (A) Snakes
- (B) Hippos
- (C) Horses
- (D) Lions

Q15.

KMU 2023

Observe the pattern and select the next term in the sequence:

P5QR, P4QS, P3QT, _, P1QV

- (A) P2QU
- (B) PQ3U2
- (C) P2QUY
- (D) PQ3U

Q16.

KMU 2023

Complete the following series:

KCD, LEF, MGH, _ , OKL.

- (A) NQM
- (B) PJI
- (C) NIJ
- (D) NJI

Q17.

DUHS 2023

If 'blue' is called 'green', 'green' is called 'white', 'white' is called 'red', and 'red' is called 'yellow', what is the color of milk?

- (A) White
- (B) Green
- (C) Yellow
- (D) Red

Q18.

UHS 2023

Observe the pattern and select the next term in the sequence:

SSSSSS, SSRSS, SRQRS, RQPQR, ?

- (A) RQDQR
- (B) QRORQ
- (C) RQPOPQR
- (D) QPOPQ

Q19.

KMU 2022

In a certain language, **REMOTE** is coded as **ROTEME**.
Which word would be coded as **PNIICC**?

- (A) PINCIC
- (B) PNICIC
- (C) PICNIC
- (D) PICCIN

Q20.

KMU 2022

Find the term which does **NOT** fit into the sequence:

1 CV, 5 FU, 9 IT, 15 LS, 17 OR

- (A) 17 OR
- (B) 5 FU
- (C) 9 IT
- (D) 15 LS

Q21.

DUHS 2022

What should come next in the series?

7C, 10F, 14J, 19O, ___

- (A) 23Q
- (B) 26N
- (C) 27X
- (D) 25U

Q22.

UHS 2022

Observe the pattern and select the next term in the sequence:

CAB, FAE, IAH, ___

- (A) JHK
- (B) LAK
- (C) JGK
- (D) IGJ

RAPID 5–COLUMN ANSWER KEY

Official PMDC verified answer keys for 08. Letter Series & Coding-Decoding.

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Q#	KEY	BOARD	Q#	KEY	BOARD	Q#	KEY	BOARD	Q#	KEY	BOARD	Q#	KEY	BOARD
1	A	BUMHS 2025	6	A	BUMHS 2025	11	D	DUHS 2024	16	C	KMU 2023	21	D	DUHS 2022
2	A	SZABMU 2025	7	B	DUHS 2025	12	B	UHS 2024	17	D	DUHS 2023	22	B	UHS 2022
3	A	NUMS 2025	8	A	DUHS 2025	13	D	BUMHS 2023	18	D	UHS 2023			
4	B	DUHS 2025	9	A	SZABMU 2025	14	D	KMU 2023	19	C	KMU 2022			
5	A	DUHS 2025	10	A	SZABMU 2024	15	A	KMU 2023	20	D	KMU 2022			

TOTAL MCQS	CORRECT	INCORRECT	BLANK	ACCURACY	
22	-----	-----	-----	-----	
				%	

Scan the booklet QR code to enter answers in **BeambePrep Grind Mode** for automated error autopsies.

PROPOLIS COGNITIVE ERROR AUTOPSIES

Step-by-step conceptual derivations, formula working, and distractor autopsies for every question.

Question #1 Key: (A)

BUMHS 2025

CAT is to DOG, as MOUSE is to:

CORE CONCEPT AND DERIVATION

Verbal Analogies – Category Categorization.

Formula: N/A

Solution: Cat and Dog form a pair of common household domestic animals. Similarly, Mouse and Rat form a pair of closely related common rodents.

Why other options are incorrect:

- **Option D:** 'Cheese' is a food associated with mice, not a taxonomic/category equivalent.

Question #2 Key: (A)

SZABMU 2025

ZX, WU, TR, QO.. What comes next?

CORE CONCEPT AND DERIVATION

Letter Pair Series Progression.

Formula: Shift both letters back by 3 positions (−3).

Solution:

- 1st letters: $Z \xrightarrow{-3} W \xrightarrow{-3} T \xrightarrow{-3} Q \xrightarrow{-3} N$
- 2nd letters: $X \xrightarrow{-3} U \xrightarrow{-3} R \xrightarrow{-3} O \xrightarrow{-3} L$

Result pair = NL.

Why other options are incorrect:

- **Option B:** Reverses the letter order (LN instead of NL).

Question #3 Key: (A)

NUMS 2025

What comes next? ZX, WU, TR, QO, ____

CORE CONCEPT AND DERIVATION

Alphabetical Decrement Pattern.

Formula: Step back 3 letters per variable.

Solution:

- $Q - 3 = N$
- $O - 3 = L$

Term = NL.

Why other options are incorrect:

- **Option B:** Incorrect letter ordering.

Question #4 Key: (B)

DUHS 2025

A spying agent coded POWER as QPXFS. Using this pattern, what will be the code for GUNBD?

CORE CONCEPT AND DERIVATION

Substitution Coding – Forward Alphabet Shift.

Formula: Code Letter = Original Letter + 1

Solution:

- $G \xrightarrow{+1} H$
- $U \xrightarrow{+1} V$
- $N \xrightarrow{+1} O$
- $B \xrightarrow{+1} C$
- $D \xrightarrow{+1} E$

Resulting code = HVOCE.

Why other options are incorrect:

- **Option A:** Shifts 'N' incorrectly to 'P'.
- **Option C:** Leaves 'N' unchanged.

Question #5 Key: (A)

DUHS 2025

Identify the next letter in the pattern: M, N, P, Q, S, ??

CORE CONCEPT AND DERIVATION

Alphabetical Position Series.

Formula: Sequential pattern of +1, +2, +1, +2, +1.**Solution:**

- $M(13) \xrightarrow{+1} N(14)$
- $N(14) \xrightarrow{+2} P(16)$
- $P(16) \xrightarrow{+1} Q(17)$
- $Q(17) \xrightarrow{+2} S(19)$
- $S(19) \xrightarrow{+1} T(20)$

Why other options are incorrect:

- Options B, C, and D: Represent incorrect step sizes.

Question #6 Key: (A)

BUMHS 2025

CAT is to DOG, as MOUSE is to:

CORE CONCEPT AND DERIVATION

Semantic Category Pairings.

Formula: N/A**Solution:** Cat and Dog pair as household pets; Mouse and Rat pair as common rodents.**Why other options are incorrect:**

- Option D: 'Cheese' is a food, not a taxonomic pair.

Question #7 Key: (B)

DUHS 2025

A spying agent coded POWER as QPXFS. Using this pattern, what will be the code for GUNBD?

CORE CONCEPT AND DERIVATION

Shift Coding.

Formula: +1 shift.**Solution:** $G \rightarrow H, U \rightarrow V, N \rightarrow O, B \rightarrow C, D \rightarrow E \Rightarrow HVOCE$.**Why other options are incorrect:**

- Option A: Shifts N incorrectly to P.

Question #8 Key: (A)

DUHS 2025

M, N, P, Q, S, ??

CORE CONCEPT AND DERIVATION

Letter Progression.

Formula: Alternating +1, +2 step.**Solution:** $S(19) + 1 = T(20)$.**Why other options are incorrect:**

- Option B: Adds 2 instead of 1.

Question #9 Key: (A)

SZABMU 2025

What comes next? ZX, WU, TR, QO, ____

CORE CONCEPT AND DERIVATION

Letter Pair Decrement.

Formula: -3 per letter.**Solution:** $Q(-3) \rightarrow N, O(-3) \rightarrow L \Rightarrow NL$.**Why other options are incorrect:**

- Option B: Reversed letter pair.

Question #10 Key: (A)

SZABMU 2024

What are the missing alphabets in the sequence: EZFA, GBHY, IXJC, _?

CORE CONCEPT AND DERIVATION

Four-Variable Letter Progression.

Formula: Apply individual positional increments.**Solution:**

- 1st letter: $E \xrightarrow{+2} G \xrightarrow{+2} I \xrightarrow{+2} K$
- 2nd letter: $Z \xrightarrow{+2} B \xrightarrow{+2} D \dots$ (Wait, $Z \rightarrow B \rightarrow X \rightarrow D$ pattern): **D**
- 3rd letter: $F \xrightarrow{+2} H \xrightarrow{+2} J \xrightarrow{+2} L$
- 4th letter: $A \xrightarrow{-2} Y \xrightarrow{+4} C \xrightarrow{-6} W$

Term = **KDLW**.**Why other options are incorrect:**

- Options B, C, and D: Transpose character positions.

Question #11 Key: (D)

DUHS 2024

Identify the pattern and choose the correct option that should follow next: VSA, WRD, XQG, YPJ, _

CORE CONCEPT AND DERIVATION

Triple Letter Series.

Formula: Apply distinct positional shifts per letter position.

Solution:

- 1st letter: $V \xrightarrow{+1} W \xrightarrow{+1} X \xrightarrow{+1} Y \xrightarrow{+1} Z$
- 2nd letter: $S \xrightarrow{-1} R \xrightarrow{-1} Q \xrightarrow{-1} P \xrightarrow{-1} O$
- 3rd letter: $A \xrightarrow{+3} D \xrightarrow{+3} G \xrightarrow{+3} J \xrightarrow{+3} M$

Term = ZOM.

Why other options are incorrect:

- **Options A and B:** Apply backward shifts to the first variable.

Question #12 Key: (B)

UHS 2024

Observe the pattern and select the next term in the sequence: JEQ, HEO, FEM, _ ?

CORE CONCEPT AND DERIVATION

Pattern Dissection.

Formula: Shift positions 1 and 3 by -2 ; keep center constant.

Solution:

- 1st letter: $J \xrightarrow{-2} H \xrightarrow{-2} F \xrightarrow{-2} D$
- 2nd letter: $E \rightarrow E \rightarrow E \rightarrow E$
- 3rd letter: $Q \xrightarrow{-2} O \xrightarrow{-2} M \xrightarrow{-2} K$

Term = DEK.

Why other options are incorrect:

- **Option A:** Shifts first letter forward.

Question #13 Key: (D)

BUMHS 2023

Observe the pattern and select the next term in the series: TEAM, TAME, TMEA, _ _ _ _

CORE CONCEPT AND DERIVATION

Positional Letter Permutation.

Formula: Cyclic swap steps.

Solution: Swapping the first character ('T') to the end progressively yields MEAT.

Why other options are incorrect:

- **Option A:** Introduces 'U' which is not in the original word.

Question #14 Key: (D)

KMU 2023

Mice are to cats as goats are to:

CORE CONCEPT AND DERIVATION

Trophic Predator-Prey Analogies.

Formula: N/A

Solution: Cats prey on mice; lions prey on goats.

Why other options are incorrect:

- **Options A, B, and C:** Non-predatory relationships to goats.

Question #15 Key: (A)

KMU 2023

Observe the pattern and select the next term in the sequence: P5QR, P4QS, P3QT, _ , P1QV

CORE CONCEPT AND DERIVATION

Alphanumeric Sequence Progression.

Formula: Number decrements by 1; last letter advances by 1.

Solution:

- Number: $5 \rightarrow 4 \rightarrow 3 \rightarrow 2 \rightarrow 1$
- Suffix: $R \rightarrow S \rightarrow T \rightarrow U \rightarrow V$

Term = P2QU.

Why other options are incorrect:

- **Option B:** Scrambles variable position.

Question #16 Key: (C)

KMU 2023

Complete the following series: KCD, LEF, MGH, _ , OKL.

CORE CONCEPT AND DERIVATION

Triple-Letter Incremental Pattern.

Formula: +1 shift for first letter, +2 shift for second and third letters.

Solution:

- 1st letter: $K \xrightarrow{+1} L \xrightarrow{+1} M \xrightarrow{+1} N$
- 2nd letter: $C \xrightarrow{+2} E \xrightarrow{+2} G \xrightarrow{+2} I$
- 3rd letter: $D \xrightarrow{+2} F \xrightarrow{+2} H \xrightarrow{+2} J$

Term = NIJ.

Why other options are incorrect:

- **Option D:** Reverses the last two letters.

Question #17 Key: (D)

DUHS 2023

If 'blue' is called 'green', 'green' is called 'white', 'white' is called 'red', and 'red' is called 'yellow',...

CORE CONCEPT AND DERIVATION

Artificial Language Substitution.

Formula: N/A

Solution: Natural color of milk is white. In this code, 'white' is designated as 'red'.

Why other options are incorrect:

- **Option A:** Uses the uncoded literal color.

Question #18 Key: (D)

UHS 2023

Observe the pattern and select the next term in the sequence: SSSSS, SSRSS, SRQRS, RQPQR, ?

CORE CONCEPT AND DERIVATION

Symmetrical Central Letter Shift.

Formula: Inner letters shift backward in alphabet.

Solution: Following the inward expansion of reverse alphabetical characters yields QPOPQ.

Why other options are incorrect:

- **Options A and B:** Violate the inner character sequence.

Question #19 Key: (C)

KMU 2022

In a certain language, REMOTE is coded as ROTEME. Which word would be coded as PNIICC?

CORE CONCEPT AND DERIVATION

Structural Transposition Coding.

Formula: Swap letters 2↔4 and 3↔5.

Solution: Applying the swap rule to PICNIC yields PNIICC.

Why other options are incorrect:

- **Option A:** Produces incorrect letter ordering.

Question #20 Key: (D)

KMU 2022

Find the term which does NOT fit into the sequence: 1 CV, 5 FU, 9 IT, 15 LS, 17 OR

CORE CONCEPT AND DERIVATION

Sequence Anomaly Detection.

Formula: Number pattern = +4; 1st letter = +3; 2nd letter = -1.

Solution:

- Numbers: $1 \xrightarrow{+4} 5 \xrightarrow{+4} 9 \xrightarrow{+4} 13$ (not 15) $\xrightarrow{+4} 17$.
- Letters: $C \xrightarrow{+3} F \xrightarrow{+3} I \xrightarrow{+3} L \xrightarrow{+3} O$.
- Letters: $V \xrightarrow{-1} U \xrightarrow{-1} T \xrightarrow{-1} S \xrightarrow{-1} R$.

The term **15 LS** breaks the arithmetic number progression (should be 13 LS).

Why other options are incorrect:

- **Options A, B, and C:** Conform strictly to the arithmetic and alphabetical rules.

Question #21 Key: (D)

DUHS 2022

What should come next in the series? 7C, 10F, 14J, 19O, ___

CORE CONCEPT AND DERIVATION

Dual Incremental Progression.

Formula: Add consecutive natural integers (+3, +4, +5, +6).

Solution:

- Number sequence: $7 \xrightarrow{+3} 10 \xrightarrow{+4} 14 \xrightarrow{+5} 19 \xrightarrow{+6} 25$
- Letter sequence: C (3) $\xrightarrow{+3}$ F (6) $\xrightarrow{+4}$ J (10) $\xrightarrow{+5}$ O (15) $\xrightarrow{+6}$ U (21)

Combined term = **25U**.

Why other options are incorrect:

- **Option A:** Uses a constant +4 step on numbers.

Question #22 Key: (B)

UHS 2022

Observe the pattern and select the next term in the sequence: CAB, FAE, IAH, ___

CORE CONCEPT AND DERIVATION

Constant and Variable Letter Shifts.

Formula: First/Third letters shift by +3; middle letter remains constant ('A').

Solution:

- 1st letter: C $\xrightarrow{+3}$ F $\xrightarrow{+3}$ I $\xrightarrow{+3}$ L
- 2nd letter: A $\rightarrow$ A $\rightarrow$ A $\rightarrow$ A
- 3rd letter: B $\xrightarrow{+3}$ E $\xrightarrow{+3}$ H $\xrightarrow{+3}$ K

Term = **LAK**.

Why other options are incorrect:

- **Option A:** Shifts first letter by +1 instead of +3.