

AFCAT Memory Based Paper - 16 Feb 2024 (Shift 1)

Reasoning

Q1 There are some people standing in front of the two counters. In the first counter girl1 rank is seventh from the counter and eighteenth from the back, in the second counter girl2 rank is third from the front and thirteen from the back. Find the total number of people standing in both the counters?

- (A) 49 (B) 36
(C) 46 (D) 39

Q2 In a certain code language "MANGO" is written as "PHOBN" and "ORANGE" is written as "FHOBSP". How will "GRAPES" be written in that code language?

- (A) TFQASH (B) TFQBHS
(C) TFQBSH (D) TFRBSH

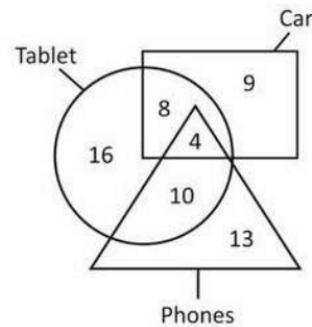
Q3 A car is parked in front of the office facing north. Driver drives the car for some distance and takes a right turn, then after driving a few distance he takes a right turn, then after a few distance he takes a left turn and reaches his home. Now in which direction the car is facing ?

- (A) North (B) West
(C) South (D) East

Q4 Three of the following four are alike in a certain way and so form a group. Which one does not belong to that group?

- (A) AUAGRJ (B) ATJES
(C) AEGIRM (D) NDAI

Q5 How many tablet are only car?



- (A) 4 (B) 12
(C) 8 (D) 17

Q6 Three statements are given followed by two conclusions numbered I and II. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

Some towns are cities.

Some cities are villages.

All villages are states.

Conclusions:

I. Some towns are not villages.

II. Some states are cities.

- (A) Only conclusion II follows
(B) Only conclusion I follows
(C) Both conclusions I and II follow
(D) Neither conclusion I nor II follows

Q7 Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Ans

Statements:

Only a few A1 are P5.

Only a few P5 are T8.



Conclusions:

I Some A1 are T8.

II All P5 can never be T8.

(A) Only conclusion II follows.

(B) Neither conclusion I nor II follow.

(C) Only conclusion I follows.

(D) Both conclusions I and II follow.

- Q8** Select the option that is related to the fifth term in the same way as the second term is related to the first term and the fourth term is related to the third term.

ERA : ETA :: HONEST : JOPEUV :: GRAIN : ?

(A) GTCIN

(B) ITCIP

(C) IRAKP

(D) ITAIP

- Q9** Four letter-clusters have been given, out of which three are alike in some manner and one is different. Select the letter-cluster that is different.

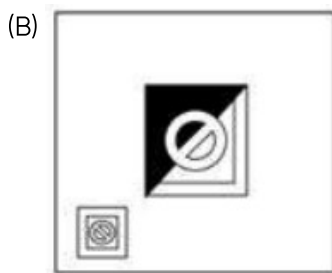
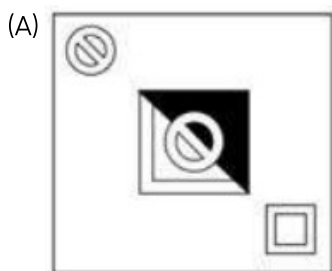
(A) HKMR

(B) BJPV

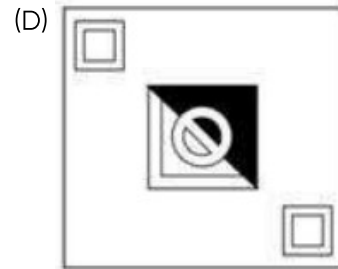
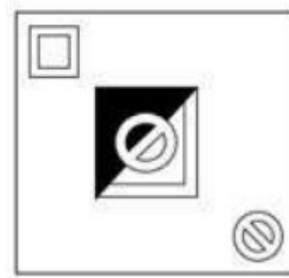
(C) DLRT

(D) FMNQ

- Q10** Select the figure that will come in place of the question mark (?) in the following figure series.



(C)



- Q11** Select the letter-cluster from among the given options that can replace the question mark (?) in the following series.

YCLE, DWQJ, IQVO, ?, SEFY

(A) HLAW

(B) NHKR

(C) HDLA

(D) NKAT

- Q12** In a certain code language, 'HUMP' is written as 'GTLO' and 'LIKE' is written as 'KHJD'. How will 'PLAY' be written in that language?

(A) OJZX

(B) QKZX

(C) OKZX

(D) OKYX

- Q13** In a family of 5 members, *X* is the sister of *Y*. *M* has two children and he is the son of *E*, who is the father-in-law of *H*. *H* has only one son. *Y* is not the grand-daughter of *E*. How is *X* related to *E*?

(A) Sister

(B) Daughter

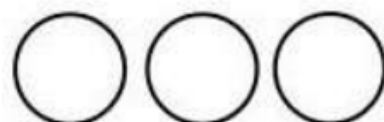
(C) Grand-daughter

(D) Grandson

- Q14** Select the Venn diagram that best represents the relationship between the following classes.

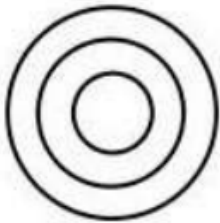
Mango, Fruit, Banana

(A)

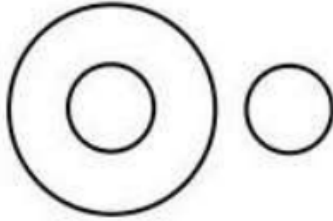


(B)

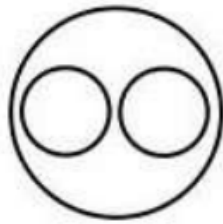




(C)



(D)



Q15 Select the figure that will come next in the following figure series.



(A)



(B)



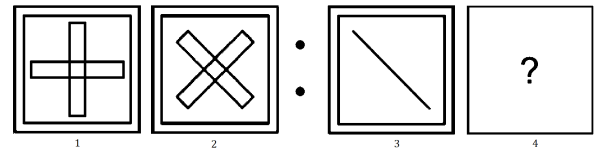
(C)



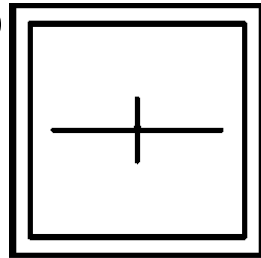
(D)



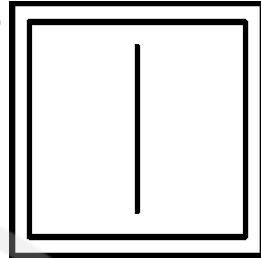
Q16 Find the perfect figure from the option figure that will replace the question mark(?) from the problem figure.



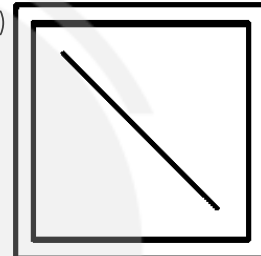
(A)



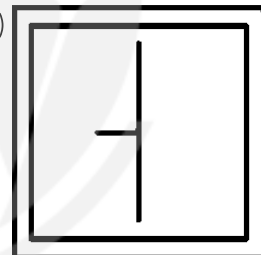
(B)



(C)



(D)



Q17 Select the figure that does not belong in the following series.



(A) C

(B) D

(C) B

(D) A

Q18 In each of the following questions, a matrix of certain characters is given. These characters follow a certain trend, row wise or column wise.

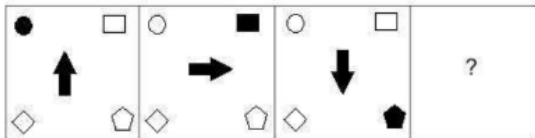


Find out this trend and choose the missing character accordingly.

862	2	761	875	2	972	963	2	844
546	2	652	766	2	566	464	?	903

- (A) 2 (B) 4
(C) 6 (D) 1

Q19 Select the figure that will replace the question following figure series.



- (A)
- (B)
- (C)
- (D)

Q20 If '-' stands for '÷', '+' stands for '×', '÷' stands for '-' and '×' stands for '+', then $80 - 20 + 10 \div 8 \times 10$ is equal to:

- (A) 42 (B) 45
(C) 78 (D) 68

Q21 If 'oranges' are 'apples', 'bananas' are 'apricots', 'apples' are 'chillies', 'apricots' are orange and 'chillies' are 'bananas', then which of the following are green in colour?

- (A) Bananas (B) Chillies
(C) Apples (D) Apricots

Q22 A series is given with one term wrong select that wrong term from the given alternatives.

MCWH, PFZK, RICN, VLFQ

- (A) MCWH (B) PFZK
(C) RICN (D) VLFQ

Q23 Select the option that is related to the third number in the same way as the second number is related to the first number.

5 : 150 :: 8 : ?

- (A) 864 (B) 576
(C) 262 (D) 186

Q24 Ronita's only brother Vikram is the husband of Kritika's mother Sejal. How is Ronita's mother Chandni related to Kritika?

- (A) Mother-in-law
(B) Maternal grandmother
(C) Paternal aunt
(D) Paternal grandmother

Q25 After interchanging the given two signs, what will be the value of the following expression?

× and ÷

$$35 + 5 \div 4 \times 2 - 15 = ?$$

- (A) 20 (B) 25
(C) 30 (D) 35



Answer Key

Q1 (D)
Q2 (C)
Q3 (D)
Q4 (D)
Q5 (C)
Q6 (A)
Q7 (A)
Q8 (D)
Q9 (C)
Q10 (C)
Q11 (D)
Q12 (C)
Q13 (C)

Q14 (D)
Q15 (C)
Q16 (B)
Q17 (C)
Q18 (A)
Q19 (D)
Q20 (A)
Q21 (A)
Q22 (C)
Q23 (B)
Q24 (D)
Q25 (C)



Hints & Solutions

Q1 Text Solution:

Answer: (d)

In first counter total number of people is:

$$\text{Total} = \text{Top} + \text{Bottom} - 1$$

$$\text{Total} = 7 + 18 - 1$$

$$\text{Total} = 24$$

In second counter total number of people is:

$$\text{Total} = \text{Top} + \text{Bottom} - 1$$

$$\text{Total} = 3 + 13 - 1$$

$$\text{Total} = 15$$

$$\text{Total people} = 24 + 15 = 39$$

Q2 Text Solution:

Answer: (c)

In this cross pattern is followed and logic is +1.

Q3 Text Solution:

Answer: (d)

Q4 Text Solution:

Answer: (d)

AUAGRJ - JAGUAR

ATJES - TEJAS

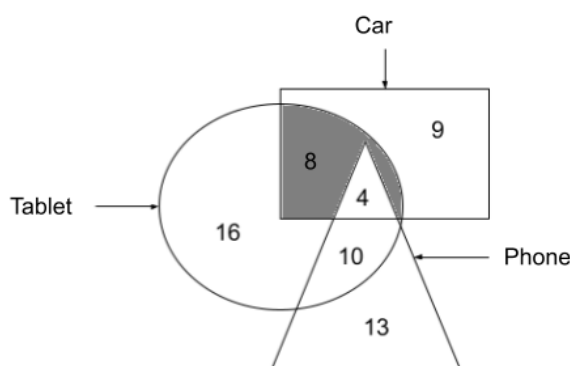
AEGIRM - MIRAGE

NDIAI - INDIA (odd one out)

Q5 Text Solution:

In this question we have to find how many tablet are only car.

According to the venn diagram:-



The shaded area shows the total number of tablets are only car.

So, the total number of tablets are only car = 8

Hence, "8" is the correct answer.

Q6 Text Solution:

In this question we have to find the conclusion that follows the statements given above using the Venn diagram.

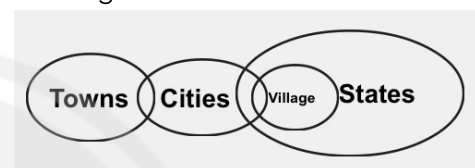
Possible Venn diagram will be :-

Statements:

Some towns are cities.

Some cities are villages.

All villages are states.



Conclusions:

I. Some towns are not villages. (False, as their is no relation given between towns and villages)

II. Some states are cities. (True, as some cities are villages and all villages are states then some states are cities).

Hence, only conclusion II follows is the correct answer.

Q7 Text Solution:

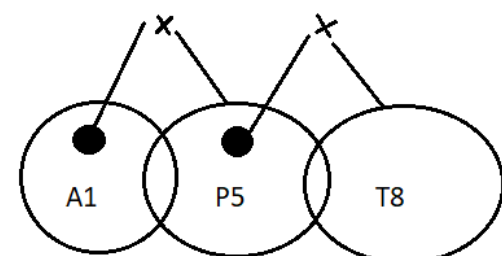
Here, in this question we have to find that which of the conclusion is followed.

Given:

Statements:

Only a few A1 are P5.

Only a few P5 are T8.



Conclusions:

I Some A1 are T8 - **Does not follow** - There is not any direct relationship between A1 and T8.



So we cannot say about this conclusion. So conclusion is not follow.

II All P5 can never be T8 - **Follow** - As per the given statemets, some part of P5 is not T8. So we can conclude the given conclusion. The given conclusion is follow.

So, Only conclusion II follows.

Hence, the correct answer is Only conclusion II follows.

Q8 Text Solution:

The simple approach to solve this question is to find an alternative that is related to the fifth term in the same way as the second term is related to the first term and the fourth term is related to the third term.

ERA : ETA :: HONEST : JOPEUV :: GRAIN : ?

The logic used is: Here in each word the place value of the consonants is increased by +2, while the position of the vowels (A,E,I,O,U) remain the same.

The pattern is as follows:

- (ERA : ETA)

E R A
+2
E T A

- (HONEST : JOPEUV)

H O N E S T
+2 +2 +2 +2
J O P E U V

- Similarly, (GRAIN : ITAIP)

G R A I N
+2 +2 +2
I T A I P

Hence, the correct answer is ITAIP.

Q9 Text Solution:

In this type of questions, three will be same and one will be different, we have to find the odd one.

The logic is that the sum of the place values of letters in all the given words except DLRT is

equal to 50.

$$H+K+M+R=8+11+13+18=50$$

$$B+J+P+V=2+10+16+22=50$$

$$D+L+R+T=4+12+18+20=55$$

$$F+M+N+Q=6+13+19+17=50$$




Hence, DLRT is the correct answer.

Q10 Text Solution:

In this type of question, we have been given a series. In this series we have to find the missing figure of this series by finding the relation.



Logic:-

-  is move 1 step anticlockwise direction.
-  is move 1 step clockwise direction.
-  is rotating at its place in 90 degree clockwise direction.

So, the next image is:-



Hence, "Option C" is the correct answer.

Q11 Text Solution:

According to the question :

We have been given letter - clusters arranged in a series using some logic . We have to identify the logic and then have to find the missing letter cluster .

The given series is :

YCLE, DWQJ, IQVO, ?, SEFY

Logic : First letter of previous cluster + 5 ranks = first letter

of next cluster

Second letter of previous cluster - 6 ranks = second



letter of next cluster

Third letter of previous cluster + 5 ranks =
third letter
of next cluster

Fourth letter of previous cluster - 5
ranks = Fourth
letter of next cluster

- YCLE , DWQJ

Y(25)	C(3)	L(12)	E(5)
↓ +5	↓ -6	↓ +5	↓ +5
D(4)	W(23)	Q(17)	J(10)

- $C - 6 = 3 - 6 = (3 - 3) - 3 = 0 - 3 = 26 - 3 = 23$
(As we count backwards)

- DWQJ , IQVO

D(4)	W(23)	Q(17)	J(10)
↓ +5	↓ -6	↓ +5	↓ +5
I(9)	Q(17)	V(22)	O(15)

- IQVO , ?

I(9)	Q(17)	V(22)	O(15)
↓ +5	↓ -6	↓ +5	↓ +5
N(14)	K(11)	A(1)	T(20)

- NKAT , SEFY

N(14)	K(11)	A(1)	T(20)
↓ +5	↓ -6	↓ +5	↓ +5
S(19)	E(5)	F(6)	Y(25)

So , the series becomes :

YCLE , DWQJ , IQVO , NKAT , SEFY

Hence , " **NKAT** " is the correct answer.

Q12 Text Solution:

The simple approach to solve this question is to find an alternative that follows the similar logic of word to letter coding.

The logic used is: Here the place value of each letter is decreasing by (-1).

'HUMP' is written as 'GTLO',

H	U	M	P
↓ -1	↓ -1	↓ -1	↓ -1
G	T	L	O

'LIKE' is written as 'KHJD',

L	I	K	E
↓ -1	↓ -1	↓ -1	↓ -1
K	H	J	D

Similarly, 'PLAY' will be written as:

P	L	A	Y
↓ -1	↓ -1	↓ -1	↓ -1
O	K	Z	X

Hence, the correct answer is **OKZX**.

Q13 Text Solution:

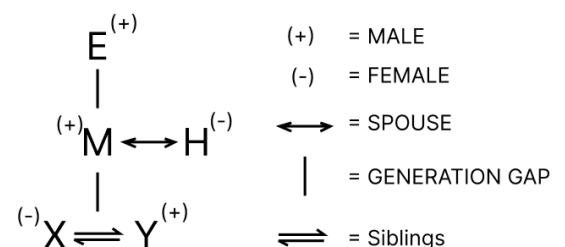
Here we are given the blood relation of a family
And we have to find out the relation of E to X.

Given-:

- In a family of 5 members, X is the sister of Y.
- M has two children and he is the son of E, who is the father-in-law of H.
- H has only one son.
- Y is not the grand-daughter of E.

The logic is as follows-:

- As per the given information, the blood relation tree of a family is given below;



- Since X is the daughter of M and E is the father of M.
- Thus, X is the Grand-daughter of E.

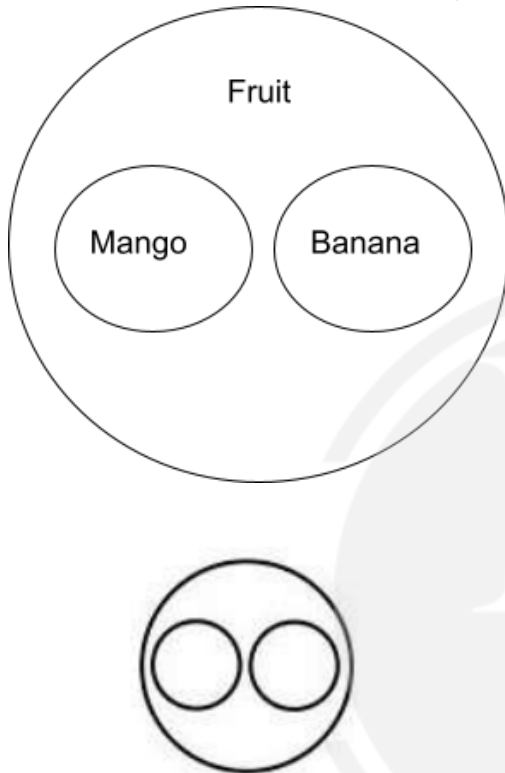


Hence, Grand-daughter is the correct answer.

Q14 Text Solution:

The Venn Diagram shows the best relationship between Mango, Fruit, Banana is shown below.

- Mangoes comes under Fruits category,
- Banana comes under Fruits category



Hence, " " is the correct answer.

Q15 Text Solution:

In the given figure : In each of the diagrams the shaded part is moving with two blocks anticlockwise in each step.

So, the next figure will be :

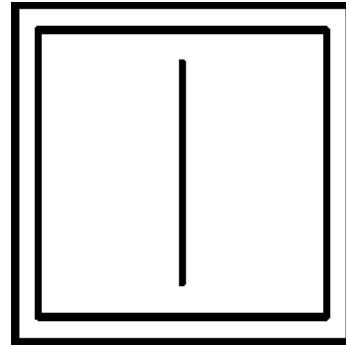


Hence, **option C** is the correct answer.

Q16 Text Solution:

From 1st figure to 2nd figure, the design rotates through 45° clockwise.

Then, 3rd figure to 4th figure, design rotates 45° clockwise and it will look like this,



Hence, " **option B** " is the correct answer .

Q17 Text Solution:

Here the pattern followed is:

After observing all the figures, we can say that figure (A), (C) and (D) contain four different elements, but figure (B) does not contain four different elements.

Therefore figure (B) is different in all.

Hence, **option (C)** is the correct answer.

Q18 Text Solution:

Here the logic is as follows

In matrix-A

$$\text{In a first row: } (8 + 6 + 2) - (7 + 6 + 1) = 16 - 14 = 2$$

$$\text{In a 2nd row: } (5 + 4 + 6) - (6 + 5 + 2) = 15 - 13 = 2$$

In matrix-B

$$\text{In a first row: } (8 + 7 + 5) - (9 + 7 + 2) = 20 - 18 = 2$$

$$\text{In a 2nd row: } (7 + 6 + 6) - (5 + 6 + 6) = 19 - 17 = 2$$

In matrix-C

$$\text{In a first row: } (8 + 7 + 5) - (9 + 7 + 2) = 20 - 18 = 2$$

$$\text{In a 2nd row: } (9 + 6 + 3) - (8 + 4 + 4) = 18 - 16 = 2$$

Hence, **2** is the correct answer.

Q19 Text Solution:

According to the question :

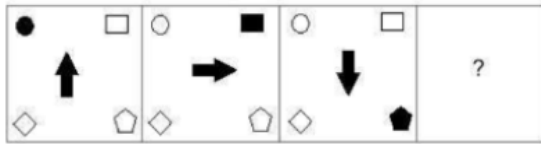
We have been given figures arranged in a series using some logic . We have to identify the logic and then have to find the figure that will replace the question mark .

Logic : 1 . The central arrow is rotating 90 degree clockwise .

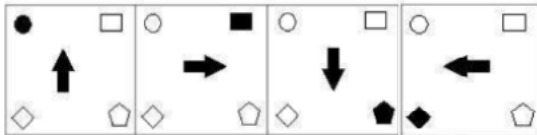
2 . The shade in corner shapes is shifting to the right in each next figure .



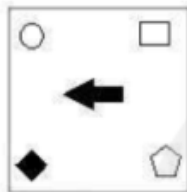
The given series is :



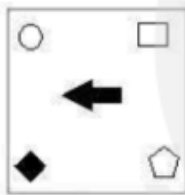
The complete series becomes :



So , the figure that will replace the question



mark will be



Hence , " " is the correct answer.

Q20 Text Solution:

- As per the given information:

Given signs:	−	+	÷	×
Replaced by signs:	÷	×	−	+

- Given equation:** $80 - 20 + 10 \div 8 \times 10 = ?$
After replacing the given signs the equation becomes:
 $\Rightarrow 80 \div 20 \times 10 - 8 + 10 = ?$

$$\Rightarrow 40 - 8 + 10 = ?$$

$$\Rightarrow 42$$

- Hence, the correct answer is 42.

Q21 Text Solution:

According to the question,

'oranges' are 'apples', 'bananas' are 'apricots', 'apples' are 'chillies', 'apricots' are orange and 'chillies' are 'bananas', then we have to find green in colour.

'Chillies' are green in colour and as given. 'chillies' are 'bananas'. So, 'bananas' are green in colour.

Hence, **Bananas** is the correct answer.

Q22 Text Solution:

Here the logic is as follows

$$\begin{array}{lcl}
 M \xrightarrow{+3} P \xrightarrow{+3} \boxed{R} \xrightarrow{+3} V \\
 C \xrightarrow{+3} F \xrightarrow{+3} I \xrightarrow{+3} L \\
 W \xrightarrow{+3} Z \xrightarrow{+3} C \xrightarrow{+3} F \\
 H \xrightarrow{+3} K \xrightarrow{+3} N \xrightarrow{+3} Q
 \end{array}$$

Here we can see place of R should be S.

Therefore RICN is the wrong term.

Hence, **RICN** is the correct answer.

Q23 Text Solution:

Here, in this question we have to find the correct logic/pattern followed in this question and find the second pair accordingly.

- Logic:** (First number)³ + (First number)² = Second number.

$$\begin{aligned}
 &5 : 150 \\
 &= (5)^3 + (5)^2 \\
 &= 125 + 25 = 150
 \end{aligned}$$

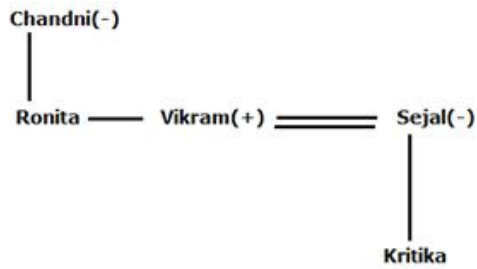
$$\begin{aligned}
 &8 : ? \\
 &= (8)^3 + (8)^2 \\
 &= 512 + 64 = 576
 \end{aligned}$$

Hence, **576** is the correct answer.

Q24 Text Solution:

As per the given information:





{Note: (-) sign indicates female and (+) sign indicates male} Thus, Chandni is parental grandmother of Kritika.

Hence, Paternal grandmother is correct answer.

Q25 Text Solution:

Here, in the given question we have to interchange two signs and find the value of the given equation.

Given equation:-

$$35 + 5 \div 4 \times 2 - 15 = ?$$

According to the given question, after interchanging \times and \div signs, we get:

$$= 35 + 5 \times 4 \div 2 - 15$$

$$= 35 + 5 \times 2 - 15$$

$$= 35 + 10 - 15$$

$$= 45 - 15$$

$$= 30$$

So, after interchanging \times and \div the value of the equation is 30.

Hence, 30 is the correct answer.



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