

CONTENTS

S.No.	Topics	Page No.
1.	Series Completion	1 - 16
2.	Coding - Decoding	17 - 24
3.	Alphabet test & Number ranking	25 - 30
4.	Mathematical Operations	31 -38
5.	Puzzle Test	39 - 46
6.	Seating Arrangement	47 - 52
7.	Blood Relations	53 - 58
8.	Direction Sense Test	59- 64
9.	Analogy	65 - 76
10.	Classification	77 - 80
11.	Logical Venn diagram	81 - 88
12.	The Calendar	89 - 94
13.	The Clock Test	95 - 100
14.	Cube Test	101 - 108
15.	The Dices	109-116
16.	Figure partition	117-122
17.	Dot Situation	123-128
18.	Mirror Image and Water Image	129-134
19.	Non - Verbal Series	135-144
20.	Non - Verbal Analogy & Classification	145-152
21.	Pyramids & Miscellaneous	153-160

NUMBER SERIES:**(a) Some Important Patterns :**(i) $a, a + d, a + 2d, a + 3d, \dots$ (Arithmetic Progression)(ii) a, ak, ak^2, ak^3, \dots (Geometric Progression)(iii) $A, \frac{a}{k}, \frac{a}{k^2}, \frac{a}{k^3}, \dots$ (Geometric Progression)

(iv) Series of prime number - i.e. 2, 3, 5, 7, 11, ...

(v) Series of composite numbers - i.e. 4, 6, 8, 9, 10, 12, ...

Direction : (1 to 6) Find the missing numbers :**Ex.1** 16, 19, 22, 25, ?**Sol.** As per series $a, a + d, a + 2d, \dots$

$$a = 16$$

$$d = 3$$

$$a + 4d = 16 + 4 \times 3$$

Ans. 28**Ex 2.** 4, 8, 16, ? 64**Sol.** As per series a, ak, ak^2, ak^3, \dots

$$a = 4$$

$$l = 2$$

$$ak^2 = 4 \times 2^3$$

Ans. 32**Ex 3.** 240, ?, 10, 40, 10, 2**Sol.** The pattern is $\times 1, \times \frac{1}{2}, \times \frac{1}{3}, \times \frac{1}{4}, \times \frac{1}{5}$
∴ missing term = $240 \times 1 = 240$ **Ans.** 240**(b) Multiple Series :**

A multiple series is a mixture of more than one series :

Ex 4. 1, 1, 4, 8, 9, ?, 16, 64**Sol.** (i) 1, 4, 9, 16 [1², 1³, 2², 2³, 3², 3³, ...]
(ii) 1, 8, _____, 64 mixed combination**Ans.** 27**Ex 5.** 9, 166, 258, ?, 4912**Sol.** Each number is in two parts. The first part is square of consecutive number 3, 4, 5, ...

$(3)^2$		$(4)^2$		$(5)^2$		$(6)^2$		$(7)^2$
9	4	16	6	25	8	36	10	49
								12

4 6 8 10 12

The second part is the sequence of numbers with difference +2, like 4, 6, 8,.....
Hence, the required number is 3610.

Ans. 3610

Ex 6. 3, 6, 24, 30, 63, 72, ?, 132

Sol. The difference between the terms is given below as :



Therefore, alternate difference between the difference is 3 and 15 respectively.
Hence, the next term would be $72 + 48 = 120$.

Ans. 120

Directions : (7 to 8) Find the wrong term(s) -

Ex 7. 1, 3, 8, 19, 42, 88, 184



Hence, number 88 is wrong and should be replaced by 89.
or $1 \times 2 + 1, 3 \times 2 + 2, 8 \times 2 + 3, 19 \times 2 + 4, 42 \times 2 + 5, 89 \times 2 + 6$

Ans. 88

Ex 8. 105, 85, 60, 30, 0, -45, -90

Sol.

105 - 20	= 85
85 - 25	= 60
60 - 30	= 30
30 - 35	= -5
-5 - 40	= -45
-45 - 45	= -90

Hence, number 0 is wrong and should be replaced by -5.

Ans. 0

Direction : (9 to 10) In each of following questions, a number series is given. After the series, below it in the next line, a number is given followed by (P), (Q), (R) (S) and (T). You have to complete the series starting with the number given following the sequence of the given series. Then answer the question given below it.

Ex 9. 12 28 64 140
37 (P) (Q) (R) (S) (T)
Which number will come in place of (T) ?



Sol.

Similarly	(P)	(Q)	(R)	(S)	(T)	
	37	78	164	340	696	1412
	X ₂₄	X ₂₈	X ₂₁₂	X ₂₁₆	X ₂₂₀	

Therefore, the number 1412 will come in place of (E).

Ans. 1412

Ex 10. 2 9 57 337

3 (P) (Q) (R) (S) (T)

Which number will come in place of (Q) ?

Sol.

	2	9	57	337
	X _{8.7}	X _{7.6}	X _{6.5}	

Similarly,

	(P)	(Q)	(R)	(S)	
	3	17	113	673	3361
	X _{8.7}	X _{7.6}	X _{6.5}	X _{5.4}	

Therefore, the number 113 will come in place of (Q).

Ans. 113

ALPHABET SERIES (SERIES OF LETTERS):

(a) Pattern of Alphabets Show Variation Based on :

- (i) Position of the letters
- (ii) Difference between the alphabets

(i) Position of alphabets:

Alphabets in order :

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

Alphabets in reverse order :

Z	Y	X	W	V	U	T	S	R	Q	P	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

Direction : (11 to 18) Find the missing term(s) :

Ex 11. B, E, H, ?

seven, eight, nine,..... steps forward respectively. Hence, NTB is the wrong term and should be replaced by MTB.

Ex 21. EPV, FOW, GRX, HTY, ITZ

Sol. In every term, first second and third letter is in alphabetical order to its next term respectively. Fourth term is not following the same rule. Hence, HTY is the wrong term and should be replaced by HSY.

Ex 22. PON, RQP, TSR, VVT, XWV, ZYX

Sol. In every term, first second and third letter is moved two steps forward to its next term respectively. Fourth term is not following the same rule. Hence, VVT is the wrong term and should be replaced by VUT.

LETTER REPEATING SERIES :

Pattern of such questions is that some letters in sequence are missing.

(i) The letter may be in cyclic order (clockwise or anti-clockwise).

(ii) To solve a problem, we have to select one of the alternatives from the given alternatives. The alternative which gives a sequence form of letters is the choice.

Direction : (23 to 28) Find the missing term(s) :

Ex 23 a s _ b a a)B b b _ a

(A) baa (B) abb (C) bab (D) aab

Sol. we proceed step by step to solve the above series :

Steps :

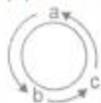
1. The first blank space should be filled in by 'b' so that we have to a's followed by two b's
2. Second blank space should be filled in by 'a' so that we have three a's followed by three b's
3. The last blank space must be filled in by 'a' to keep the series in sequence

Ans. (A) baa

Ex.24 _ bca _ ca _ c _ b _

(A) aabbc (B) abbbc (C) aabcc (D) abbac

Sol.



Series is abc/abc/abc/abc. So, pattern abc is repeated.

Ans. (D) abbac

Ex.25 a _ abb _ aa _ ba _ a _ b

(A) ababa (B) aabba (C) aabab (D) aaabb

Sol. Series is aaabb/aaabb/aaabb. So, pattern aaabb is repeated.

Ans. (C) aabab

Ex.26 a _ c _ abb _ ca _ a

(A) baca (B) bbca (C) bacc (D) bacb

Sol. Series is abc/aabbcc/aaa

Ans. (A) baba

Ex.27 a _bc_a _bcda_ccd_bcd_

(A) abdbdbd (B) acbdbb (C) adbbaad (D) bbbbbb

Sol. Series is aabcd/abbcd/abccd/abcdd

Ans. (C) adbbaad

Ex.28 cc_ccdd_d_cc_ccdd_dd

(A) dcddc (B) dcddc (C) dcddd (D) None of these

Sol. Series is ccdd/ddddd/ccdd/ddddd

Ans. (B) dcddd

Direction : (29) The question given below is based on the letter series, in series, some letter are missing. Select the correct alternative. If more than five letters are missing, select the last five letters of the series.

Ex.29 xyzu_yz_v_uv_____

(A) uvxyz (B) vuzyx (C) uvzyx (D) vuxyz

Sol. The series is x y z u \bar{x} / y z \bar{u} v \bar{z} u v \bar{y} / \bar{u} \bar{v} \bar{x} \bar{y} \bar{z}
Thus the letters are written in a cyclic order.

Ans. (A) uvxyz

Direction : (30) There is a letter series in the first row and a number series in the second row. Each number in the number series stands for a letter in the letter series. Since in each of that series some terms are missing you have to find out as to what those terms are, and answer the questions based on these as given below in the series.

Ex.30 a_h__c_n_e_h_e_a_c_____

2 1_4 3_5__2 5 4_____

The last five terms in the series are

(A) 32524 (B) 43215 (C) 25314 (D) 32541

Sol. By taking a = 2, c = 1, n = 4, h = 5 and e = 3, the numbers series runs as 21543 15432 54321 43215. If first digit of a group of five digits is placed as the last digit, we obtain the second group of five digits and so on.

Ans. (B) 43215

Direction : (31) In the following question, three sequences of letter/number are given which correspond to each other in some way. In the given question, you have to find out the letter/numerals that come in the vacant places marked by (?). These are given as one of the four alternatives under the question. Mark your answer as instructed.

Ex.31 C B __ D _ B A B C C B

__ 2 3 5 4 __ ? ? ? ?

P _ P Q _ r _ q _____

(A) 4 5 5 4 (B) 4 3 3 4 (C) 4 2 2 4 (D) 2 5 5 2

Sol. Comparing the positions of the capital letters, numbers and small letters, we find p corresponds to C and 2 corresponds to p. So, p and 2 correspond to C. q corresponds to A and 3 corresponds to q. So, q and 3 corresponds to A. Also, 5 corresponds to D. So, the remaining number i.e., 4 corresponds to B. So, BCCB corresponds to 4, 2, 2, 4.

Ans. (C) 4224

MISSING TERMS IN FIGURES :

Directions : (32 to 40) Find the missing number(s) :



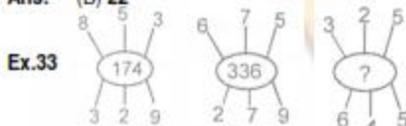
(A) 32 (B) 22 (C) 18 (D) 27

Sol. In first figure, $5 \times 4 + 6 = 26$

In second figure, $8 \times 3 + 5 = 29$

\therefore missing number in third figure, $6 \times 3 + 4 = 22$

Ans. (B) 22

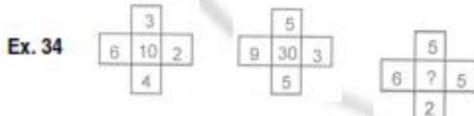


(A) 140 (B) 150 (C) 200 (D) 180

Sol. In first figure, $8 \times 5 \times 3 + 3 \times 2 \times 9 = 120 + 54 = 170$
In second figure, $6 \times 7 \times 5 + 2 \times 7 \times 9 = 210 + 126 = 336$

\therefore missing number in third figure, $3 \times 2 \times 5 + 6 \times 4 \times 5 = 30 + 120 = 150$

Ans. (B) 150



(A) 15 (B) 20 (C) 25 (D) 40

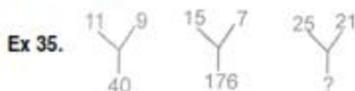
Sol. Clearly

In first figure, $6 \times 3 - 4 \times 2 = 18 - 8 = 10$

In second figure, $9 \times 5 - 5 \times 3 = 45 - 15 = 30$

\therefore In third figure, $6 \times 5 - 2 \times 5 = 30 - 10 = 20$

Ans. (B) 20



- (A) 184 (B) 210 (C) 241 (D) 425

Sol. The number at the bottom is the difference of squares of two numbers given at top

$$\text{In first, } 11^2 - 9^2 = 121 - 81 = 40$$

$$\text{In second figure, } 15^2 - 7^2 = 225 - 49 = 176$$

$$\therefore \text{In third figure, } 25^2 - 21^2 = 625 - 441 = 184$$

Ans. (A) 184

Ex. 36

6	18	15
3	2	5
4	3	?
8	27	9

- (A) 11 (B) 6 (C) 3 (D) 2

Sol. Clearly, in the I Column, $\frac{6 \times 4}{3} = 8$

$$\text{In the II column, } \frac{18 \times 3}{2} = 27$$

We take x in place of ?

$$\text{Similarly in the III column, } \frac{15 \times x}{5} = 9$$

$$x = \frac{9 \times 5}{15} = 3$$

Ans. (C) 3

Ex. 37

1	4
7	
5	3

3	4
6	
2	3

2	0
?	
1	3

- (A) 0 (B) 2 (C) 3 (D) 1

Sol. $(4 \times 3) - (5 \times 1) = 7$, $(4 \times 3) - (2 \times 3) = 6$

$$\text{Similarly, } (2 \times 1) - (3 \times 0) = 2$$

Ans. (B) 2

Ex. 38

9
5 - 8 - 3
7

5
4 - 7 - 0
6

10
7 - ? - 5
3

- (A) 12 (B) 9 (C) 14 (D) 10

Sol. In the Diagram, $(9 - 3) + (7 - 5) = 8$

$$\text{In the II Diagram, } (6 - 4) + (5 - 0) = 7$$

Ans. \therefore In the III Diagram, $(10 - 5) + (7 - 3) = 9$
(B) 9

Ex. 39 Find the missing letters from left to right.

Z	-	V
R	K	-
-	C	F

(A) JSN

(B) JNS

(C) JRS

(D) KRS

Sol. In first column, $Z = 26$, $R = 18$
In second column, $K = 11$, $C = 3$
We find the gap of 8 is there both columns.
adopting the same rule, we find that

Ans.
Ex 40.

3	8	10	2	?	1
6	56	90	2	20	0

$V = 22$, $N = 14$
(A) JSN

(A) 0

(B) 3

(C) 5

(D) 7

Sol. Suppose X denotes the numbers in the first row and Y denotes the numbers in the second row.

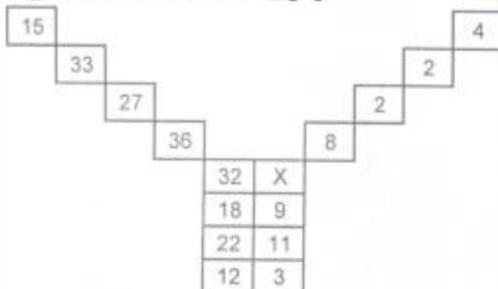
Then, the pattern is $X^2 - X = Y$.

Clearly, $3^2 - 3 = 9 - 3 = 6$; $8^2 - 8 = 64 - 8 = 56$; $10^2 - 10 = 100 - 10 = 90$; $2^2 - 2 = 4 - 2 = 2$; $1^2 - 1 = 1 - 1 = 0$.

Similarly, $5^2 - 5 = 20$. So, the missing number is 5.

Ans. (C) 5

Ex. 41 Find the value of X in the following figure :



(A) 3

(B) 4

(C) 8

(D) 12

Sol. The top left number is obtained by adding the bottom two numbers. The top right hand number is the result of dividing the bottom two numbers. Thus,
 $12 + 3 = 15$, $12 \div 3 = 4$;
 $22 + 11 = 33$, $22 \div 11 = 2$;

$18 + 9 = 27$, $18 \div 9 = 2$.

So, $32 + X = 36$ and $32 \div X = 8$ or $X = 4$.

Ans. (B) 4

PRACTICE EXERCISE

Directions : (1 to 5) Find the missing numbers :

1. 2, 8, 18, 32, ?
(A) 62 (B) 60 (C) 50 (D) 46
2. 16, 54, 195, ?
(A) 780 (B) 802 (C) 816 (D) 824
3. 14, 316, 536, 764, ?
(A) 981 (B) 1048 (C) 8110 (D) 9100
4. 8, 11, 15, 22, 33, 51, ?, 127, 203
(A) 80 (B) 53 (C) 58 (D) 69
5. 2, 3, 6, 18, ?, 1944
(A) 154 (B) 180 (C) 108 (D) 452
6. 7, 19, 55, 163, ?
(A) 387 (B) 329 (C) 527 (D) 487
7. 1, 2, 9, 4, 25, 6, ?
(A) 51 (B) 49 (C) 50 (D) 47
8. 16, 33, 67, 135, ?
(A) 371 (B) 175 (C) 271 (D) 287
9. 8, 24, 16, ?, 7, 14, 6, 18, 12, 5, 5, 10
(A) 14 (B) 10 (C) 7 (D) 5
10. 2, 12, 36, 80, 150, ?
(A) 194 (B) 210 (C) 252 (D) 258

Directions : (11 to 13) In each of the following questions, a number series is given. After series, below it in the next line, a number is given followed by (P), (Q), (R), (S) and (T). You have to complete the series starting with the number given following the sequence of the given series. Then answer the question given below it.

11. 2 3 8 27
5 (P) (Q) (R) (S) (T)
Which of the following numbers will come in place of (T) ?
(A) 184 (B) 6 (C) 925 (D) 45
12. 5 18 48 112
7 (P) (Q) (R) (S) (T)
Which number will come in place of (S) ?
(A) 172 (B) 276 (C) 270 (D) 376
13. 15 159 259 323
7 (P) (Q) (R) (S) (T)

Which of the following numbers will come in place of (R) ?

- (A) 251 (B) 315 (C) 176 (D) 151

Direction : (14 to 15) Find the wrong term(s) -

14. 9, 11, 15, 23, 39, 70, 135
(A) 23 (B) 39 (C) 70 (D) 135
15. 3, 9, 36, 72, 216, 864, 1728, 3468
(A) 3468 (B) 1728 (C) 864 (D) 216

Directions : (16 to 25) Find the missing term(s) :

16. DFK, FEL, HDM, JCN, ?
(A) KBN (B) KBO (C) LBO (D) LBN
17. JXG, HTJ, FPN, ?, BHY
(A) EKS (B) ELS (C) DRL (D) DLS
18. B2E, D5H, F12K, H27M, ?
(A) J58Q (B) J56Q (C) J57Q (D) J56P
19. CYD, FTH, IOL, LJP, ?
(A) PET (B) OET (C) OEY (D) PEV
20. ZGL, XHN, VIQ, TJU, ?
(A) RKK (B) RKY (C) RLZ (D) RKZ
21. 2B, 4C, 8E, 14H, ?
(A) 22L (B) 24L (C) 22K (D) 2 M
22. MTH, QRK, UPN, YNQ, ?
(A) CKT (B) CLT (C) ELT (D) EKT
23. B3M, E7J, H15G, K31D, ?
(A) N65A (B) O63A (C) N63A (D) N63Z
24. 5X9, X8U12, 11R15, 14O18, ?
(A) 17L21 (B) 17K21 (C) 17M21 (D) 17L23
25. 6C7, 8F10, 11J14, 15O19, ?
(A) 19U24 (B) 20U25 (C) 19U25 (D) 20U24

Direction : (26 to 29) Find the wrong term(s) :

26. ECA, JHF, OMK, TQP, YWU
(A) ECA (B) JHF (C) TQP (D) YWU
27. DKY, FJW, HIT, JHS, LGQ
(A) FJW (B) LGQ (C) JHJ (D) HIT
28. DVG, FSI, HPK, JNM, LJO
(A) DVG (B) JNM (C) HPK (D) LJO
29. CDF, DEG, EFH, FHI
(A) CDF (B) DEG (C) FHI (D) EFH

30. ZLA, BMY, CNW, FOU, HPS
 (A) ZLA (B) BMY (C) FOU (D) CNW

Directions : (31 to 38) Which sequence of letter when placed at the blanks one after the other will complete the given letter series ?

31. a_baaa_aa__ab
 (A) aaaaa (B) baaaa (C) bbaaa (D) abbaa
32. _aabb_aab_b
 (A) bbaaa (B) baba (C) baab (D) abab
33. aab_aaa_bba_
 (A) baa (B) abb (C) bab (D) aab
34. a__b_aab_aa
 (A) abaab (B) bbaba (C) bbabb (D) baaba
35. abc_d_bc_d_db_cda
 (A) bacdc (B) cdabc (C) dacab (D) dccbd
36. a_bbc_aab_cca_bbcc
 (A) bacb (B) acba (C) abba (D) caba
37. _bc__bb_aabc
 (A) acac (B) babc (C) abab (D) aacc
38. _bcc_ac_aabb_abcc
 (A) aabca (B) abaca (C) bacab (D) bcaca

Directions : (39 to 40) The questions given below are based on the letter series. In each of these series, some letters are missing. Select the correct alternative. If some than five letters are missing, select the last five letters of the series.

39. _r_ttp__s_tp____s____
 (A) rstqp (B) tsrqp (C) rstpq (D) None
40. _x_zbxazyxabyz_____
 (A) abxzy (B) abzxy (C) abxyz (D) bxayz

Directions : (41 to 42) There is a letter series in the first row and a number series in the second row. Each number in the number series stands for a letter in the letter. Since in each of that series some term are missing you have to find out as to what those terms are, and answer the questions based on these as given below in the series.

41. a_b_c_d_a_a_b_d_d_b_a_
 1_3_3_2_1__4_____
 The last four terms in the series are
 (A) 1234 (B) 3112 (C) 3211 (D) 4312
42. -bnt__nam_nab__a_____
 1_3__2_5_3__5_2_4__3_2_5_____
 The last five terms in the series are
 (A) 13425 (B) 41325 (C) 34125 (D) 13452

Directions : (43 to 45) In each of the following questions, there sequences of letter. numbers are given which correspond to each other in some way. In each question, you have to find out the letter/numerals that come in the vacant places marked by (?). These are given as one of the four alternatives under the question. Mark your answer as instructed.

43. _A_C__B_D__C_D_C_D
 2__4_1__1_4_____
 rs_qr_p????
 (A) pqpq (B) prpr (C) rqrq (D) rsrs
44. A__B_A_C__D__B_C_D_C
 _4__3__2__5?????

- dC _ _ bacb _ _ _ _
 (A) 2454 (B) 2545 (C) 3454 (D) 4525
45. _ A D A C B _ _ B D C C
 24 _ _ 2353 _ _ _ _
 p _ _ q _ _ rs ? ? ? ?
 (A) prss (B) psrr (C) rpss (D) srpp

Directions : (46 to 50) Find the missing term in the given figures

46.

17	11	19
12	13	16
25	4	?

(A) 36

(B) 9

(C) 25

(D) 64

- 47.
-

(A) 14

(B) 18

(C) 11

(D) 13

- 48.
-

(A) 112

(B) 92

(C) 82

(D) 102

- 49.
-

(A) 235

(B) 141

(C) 144

(D) 188

- 50.
-

(A) 18

(B) 12

(C) 9

(D) 6

- 51.
-

(A) 14

(B) 22

(C) 32

(D) 320

- 52.
- | | | |
|---|----|---|
| 5 | 9 | 8 |
| 5 | 15 | ? |
| 3 | 5 | 6 |

(A) 12

(B) 11

(C) 16

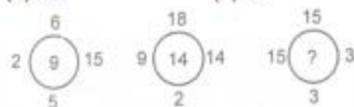
(D) 26

-

53.

- (A) 72 (B) 18 (C) 9 (D) 19

54.



- (A) 1 (B) 18 (C) 90 (D) 225

55.



- (A) 20 (B) 22 (C) 24 (D) 12

56.

7	11	49
12	8	54
15	4	?

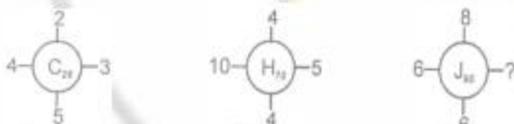
- (A) 36 (B) 7 (C) 25 (D) 0

57.

7	11	49
12	8	54
15	4	?

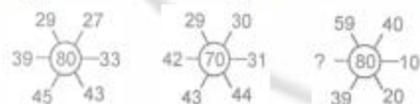
- (A) 2 (B) 3 (C) 4 (D) 5

58.



- (A) 1 (B) 3 (C) 4 (D) 5

59.



- (A) 69 (B) 49 (C) 50 (D) 60

60.



- (A) 127 (B) 142 (C) 158 (D) 198

ANSWERS

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	C	D	D	A	C	D	B	C	C	C	C	B	B	C	A
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	C	D	A	B	D	A	C	C	A	B	C	D	B	C	D
Que.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Ans.	D	D	A	A	C	B	A	C	C	A	C	D	A	B	D
Que.	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ans.	B	D	B	D	C	C	C	D	A	D	D	B	C	A	B



Similarly,



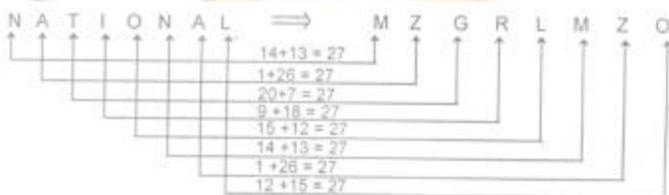
Ans. (B)

Note : The sum of a alphabet in order & in reverse order is 27 as explained below -

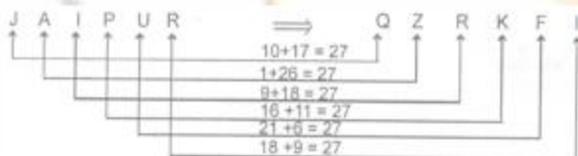
Ex. 3. If in any code language **NATIONAL** is written as **MZGRLMZO** than how is **JAIPUR** written in that language.

- (A) QZRKFI (B) PZRKFI (C) QZRIFK (D) QARKFI

Sol.



Similarly,

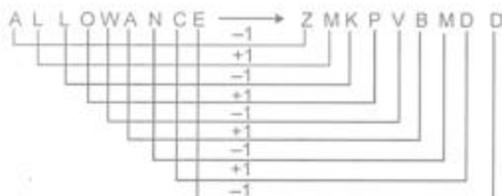


Ans. (A)

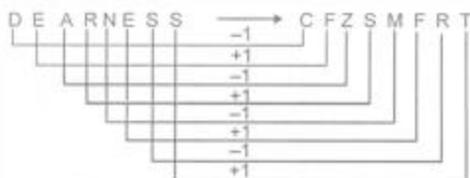
Ex 4. If the code for **ALLOWANCE** is **ZMKPVBMD**, the word **DEARNESS** would be coded as :

- (A) CFBAODTR (B) EDZQMFRT (C) CDZTMFTR (D) CFZSMFRT

Sol.



Similarly,



Ans. (D)

Ex 5. If **RAT** = 42 and **CAT** = 57, then **LATE** = ?

- (A) 60 (B) 70 (C) 64 (D) 74

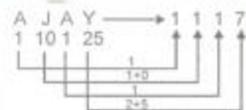
Sol. In the given code Z = 1, Y = 2, X = 3,, C = 24, B = 25, A = 26.
So, RAT = 9 + 26 + 7 = 42 and CAT = 24 + 26 + 7 = 57
Similarly, LATE = 15 + 26 + 7 + 22 = 70

Ans. (B)

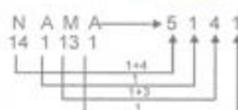
Ex 6. If **AJAY** is written as **1117**, then is same code **NAMA** would be written as

- (A) 5114 (B) 5411 (C) 5141 (D) 4511

Sol.



Hence



Ans. (C)

Ex 7. In certain language, if **1** is coded as **A**, **2** as **B**, **3** as **C**, and so on, how is **FLOWER** coded in that code ?

- (A) 6121523518 (B) 6121823515 (C) 6211523518 (D) 6218123515

Sol. In the given code 1 = A, 2 = B, 3 = C,, 24 = X, 25 = Y, 26 = X

So, in FLOWER, F is coded as 6, L as 12, O as 15, W as 23, E as 5 and R as 18.

Ans. (A)

Ex 8. If the animals which can walk are called **swimmers**, animals which can crawl are called **flying**, those which live in water are called **snakes**, and those which fly in the sky are called **hunters**, then what will a **lizard** be called ?

- (A) Swimmer (B) Snake (C) Hunter (D) Flying

Sol. A lizard is an animal which crawls and hence is called 'flying'

Ans. (D)

Ex 9. If **knr lin hcn** stands for **everything is fine** ; **nso one lin** stands for **there is something** and **ksa nso wno** stands for **ask something now** ; What would **there** stand for ?
 (A) lin (B) nso (C) ons (D) kse

Sol. **lin is** common in first two sentences, it stands for **is** **nso** is common in last two sentences, it stands for **something**. Clearly, in second statement **there** stands for **ons**.

Ans. (C)

Ex 10. In a code language **157** means **mother always lovable**, **619** means **always happy future** and **952** means **mother very happy** then what does the word **future** stand for in the same language ?
 (A) 9 (B) 6 (C) 1 (D) Can not be determined

Sol. 157 means mother always lovable(i)

619 means always happy future(ii)

952 means mother very happy(iii)

from (i) & (ii) **always** means **1**

from (i) & (iii) **happy** means **9**

So, **future** means **6**

Ans. (B)

Directions : (11 to 14) Column I contains five capital letters while column II contains five digits. Each letter corresponds to a single digit but not necessarily in that order.

Column-I	Column-II
BEIKL	61520
PNBTK	34568
XLPBE	57401
KNIXV	27396
XBNPE	45713

Ex 11. What is the value of **BIKE** ?
 (A) 5261 (B) 6125 (C) 2560 (D) None of these

Ex 12. What is the value **PIN + NIP** ?
 (A) 423 (B) 744 (C) 777 (D) 747

Ex 13. What is the value of **BITE - KITE** ?
 (A) 386 (B) 1000 (C) -1000 (D) None of these

Ex 14. What is value of **NIL + NINE -TEN** ?
 (A) 4364 (B) 2738 (C) 2097 (D) None of these

Sol. (11 to 14) :

A digit will be the code of letter if both are present in the same rows and also absent in the same rows.

So, Code of B is 5 as both are present in row no. (i), (ii), (iii), (v) & absent in row no. (iv).
 Code of E is 1 as both are present in row no. (i) (iii), (v) & absent in row no. (ii), (iv)
 Code of I is 2 as both are present in row no. (i) (iv) & absent in row no. (ii), (iii), (v).
 Code of L is 0 as both are present in row no. (i) (ii), (iv) & absent in row no. (iii), (v).
 Code of K is 6 as both are present in row no. (i), (ii), (iv), & absent in row no. (iii), (v).
 Code of N is 3 as both are present in row no. (ii), (iv), (v) & absent in row no. (i), (iii),
 Code of P is 4 as both are present in row no. (ii) (iii), (v) & absent in row no. (i) (iv).
 Code of T is 8 as both are present in row no. (ii) & absent in row no. (i), (iii), (iv), (v).
 Code of V is 9 as both are present in row no. (iv) & absent in row no. (i), (ii), (iii), (v).
 Code of X is 7 as both are present in row no. (iii), (iv), (v) & absent in row no. (i), (ii).
 So, we can summaries the result in the following table :

Letters	B	E	I	K	L	N	P	T	V	X
Digits	5	1	2	6	0	3	4	8	9	7

11. 5261
 12. $423 + 324 = 747$
 13. $5281 - 6281 = -1000$
 14. $320 + 3231 - 813 = 2738$

Directions : (15 to 16) In each questions there is a word written in capital letters with one letter underlined. For each letter in that word there is a code written in small letters. That code is denoted by either (A), (B), (C), (D) or (E) not in the same order. You have to find out the exact code for the underlined letter in the word. The number of that code is the answer. Please note that the same letter appearing in other word(s) may be coded differently.

Ex 15. MAGIC

(A) km (B) eg (C) ik (D) ce (E) oq

Sol. $M(+2) o (+2) q \rightleftharpoons 'oq'$, $A(+2) (+2) e \rightleftharpoons 'ce'$, $G(+2)i(+2) k \rightleftharpoons 'ik'$, $I(2+)k(+2)m \rightleftharpoons 'km'$ and $C(+2)e(+2)g \rightleftharpoons 'eg'$

Ans. (C)

Ex 16. QUITE

(A) hj (B) su (C) tc (D) pr (E) df

Sol. $Q(-1)p(+2)r \rightleftharpoons 'pr'$, $U(-1)t(+2)v \rightleftharpoons 'tv'$, $I(-1)h(+2) j \rightleftharpoons 'hj'$, $T(-1)s (+2)u \rightleftharpoons 'su'$ and $E(-1)d(+2)f \rightleftharpoons 'df'$

Ans. (D)

PRACTICE EXERCISE

1. If in any code language **TARGET** is coded as **UYUCNJ** then which word is coded as **VICTORY** in that language ?
 (A) UKZXJXR (B) UKYXJDR (C) UKYXJWD (D) None
2. If in a certain code **MANISH** is written as **NZMRHS**, then how will **RANJITA** be written in the same code ?
 (A) IZMQRGZ (B) IZMPRGZ (C) IZMQRHZ (D) IZMQRIZ
3. If **MENTAL** is written **LNDFMOSUZBKM**, then how would **TEST** be written in that code ?
 (A) UVFGTIIV (B) RSCDQRRS (C) SUDFRQRSM (D) SUDFRTSU
4. If **HERCULES** is coded as **JCTAWJGQ**, then what is the code for **APHORDITE** ?
 (A) CNMJTBKRG (B) CNJMTBKSG (C) CNJMTBKRG (D) CNJMTCKRG
5. If **BOX** is coded as **CDPQYZ** what will be the last two letters of word in the same code for **HERO** ?
 (A) N, M (B) M, N (C) P, Q (D) Q, P
6. If **IMPORT** is written **USPQNJ**, then how will **CAPITAL** be written in this code ?
 (A) MBUJQBD (B) KZSHOZB (C) MUBJBDO (D) MBQJUBD
7. If $XY = 600$, $ABC = 6$ then, $GO + DO$ will be equal to :
 (A) 150 (B) 180 (C) 165 (D) 155
8. If **ANCE** is coded as **3, 7, 29, 11** then **BIOL** will be coded as :
 (A) 5, 31, 21, 25 (B) 5, 31, 19, 25 (C) 5, 29, 19, 25 (D) 5, 29, 19, 17
9. If **ADARSHI** is coded as 53, **SCHOOL** is coded as 66 then the word **STUDENT** will be coded as :
 (A) 90 (B) 97 (C) 89 (D) 96
10. In a certain code **KAMAL** is written as **29894**, **VJAY** is written as **35196**, then the word **VIMAL** will be coded as :
 (A) 29196 (B) 35894 (C) 35194 (D) 35196
11. If **DEAR** is coded as **7** and **BEARS** as **9**, what should be the code for **WAX** ?
 (A) 10 (B) 12 (C) 16 (D) 10
12. If **air** is called **water**, **water** is called green, green is called **dust**, **dust** is called **yellow** and **yellow** is called **cloud**, which of the following does **fish** live in ?
 (A) Air (B) Water (C) Green (D) Dust
13. If **rains** is called **pink**, **pink** is called **cloud**, **cloud** is called **water**, **water** is called **breeze**, and **breeze** is called **moon**, what do you wash your **hands** with ?
 (A) Water (B) Rain (C) Breeze (D) Moon
14. In a certain code **XZM** means **he is bright**, **TCZO** means **every lawn is green**, and **OQCN** every wall was **green**. Which of the following does mean **every lawn is bright** in that code ?

(A)ZTOM (B)CXZT (C)XOTZ (D)Cannot be detemened

15. In a certain code language, **Pat Zoo Sim** means **Eat Good Mangoes**. **Pus Sim Tim** means **Mangoes And Sweets** and **Tim Zoo Kit** means **Purchase Good Sweets**. Which word in the language means **Good** ?
 (A) Zoo (B) Pus (C) Sim (D) Tim
16. In a certain code **786** means **study very hard**, **958** means **hard work pays** and **645** means **study and work**. Which of the following is the code for **very** ?
 (A) 8 (B) 6 (C) 7 (D) Cannot be determined
17. If **men are very busy** means **1234**, **busy persons need encouragement** means **4567**, **encouragement is very important** means **3589** and **important persons are rare** means **2680** what is the code for **encouragement** ?
 (A) 5 (B) 6 (C) 8 (D) 9

Directions : (18 to 22) According to a code language, words in column I are written in capital letters. And in column II their codes are given. The codes in column II are jumbeld up. Decode the language and choose the correct code for word given in each question.

Column I Column II

DELIBERATION aemrqs
 CONSIDERATE ccehlmo
 GHOSTLIKE cfhmoqrx
 WORLDLY cdgmqrxyz
 KNOWLEDGE adefmopqqs
 ROCKET cefmopqqszz

18. KNIGHT
 (A) ghrxyz (B) fhmpqr (C) gprxyz (D) fgrrxz
19. BLOAT
 (A) ckmps (B) cmpqs (C) ikpqz (D) hmpqz
20. NOTICE
 (A) efhpps (B) fghpqr (C) afmqsz (D) acdeqs
21. SOLACE
 (A) acdmpq (B) demopq (C) acemoq (D) acedpqr
22. WORDY
 (A) adeop (B) efhlm (C) ehlm0 (D) fhlmq

Direction : (23 to 25) In each question there is a word written in capital letters with one letter

underlined. For each letter in that word there is a code written in small letter. That code is denoted by either (A), (B), (C), (D) or (E) not in the same order. You have to find out the exact code for the underlined letter in the word. The number of that code is the answer. Please not that the same letter appearing in other word(s) may be coded differently.

23. PAGES
(A) b (B) u (C) r (D) x
24. BREAK
(A) z (B) g (C) p (D) c
25. APRIL
(A) s (B) f (C) u (D) x

ANSWERS

Qu.	1	2	3	4	5	6	7	8	9	10	11	12	13
Ans.	A	A	D	C	C	A	C	B	D	B	C	C	C
Qus.	14	15	16	17	18	19	20	21	22	23	24	25	
Ans.	D	A	C	A	D	A	C	A	C	A	A	C	

ALPHABETICAL ORDER :

You have to arrange these words in order in which they are arranged in a dictionary. In a dictionary the words are placed in alphabetical order w.r.t. the second alphabet of the words and so on (that is, third alphabet, fourth alphabet.....)

Direction : (1 to 2) *Arrange in the correct alphabetical order.*

Ex 1. Arrange in alphabetical order and find which word comes in the middle ?
Select Seldom, Selfish, Seller, Send, Second, Section

Sol. The given words can be arranged in the alphabetical order as :
Second, Section, Seldom, **Select**, Selfish, Seller, Send
Clearly, **select** comes middle.

Ex 2. Arrange the given words in the sequence in which they occur in the dictionary and choose the correct sequence.

1. Precede 2. Precision 3. Precise 4. Precept 5. Preach 6. Prelude

(A) 5, 3, 1, 4, 2, 6 (B) 5, 1, 4, 3, 2, 6 (C) 5, 1, 3, 4, 2, 6 (D) 5, 1, 4, 2, 3, 6.

Sol. (B) The correct alphabetical order of the given words is :
Preach, Precede, Precept, Precise, Precision, Prelude. Thus, the correct sequence is **5, 1, 4, 3, 2, 6.**

Direction : (3) *In the following question, a group of letters is given which are numbered 1,2,3,4,5 and 6. Below are given four alternatives containing combinations of these numbers. Select that combination of numbers so that letters arranged accordingly, form meaningful word.*

Ex 3. A C P E T S

1 2 3 4 5 6

(A) 1, 6, 3, 4, 2, 5 (B) 2, 3, 4, 1, 5, 6 (C) 5, 6, 3, 4, 1, 2 (D) 6, 5, 3, 4, 2, 1

Sol. (A) The given letter, when arranged in the order **1, 6, 3, 4, 2, 5.** Form the word **ASPECT.**

Ex 4. If any two letters in the word **PRISON** have as many letters between them in the word as there are in the English alphabet, they form an alpha-pair. How many such alpha-pairs are there in the word **PRISON ?**
(A) 4 (B) 1 (C) 2 (D) 3

- Sol.** (A) **Letter in the given word** **Letter in the alphabet series**
 (i) O N N O
 (ii) P R I S P O R S
 (iii) R I S O N R Q P O N

- Ex 5.** Number of letters skipped in between adjacent letters in the series is odd. Which of the following series observes this rule ?
 (A) BDHLR (B) FIMRX (C) EIMQV (D) MPRUX

- Sol.** (A) B C D E F G H I J K L M N O P Q R
 1 3 3 5

Clearly, in letter series **BDHLR**, the number of letter skipped in between adjacent letters in the series is odd.

- Ex 6.** If you count **21** letter in the English alphabet from the end and **20** letters from the beginning which letter will appear exactly in the middle of the sequence thus formed ?
 (A) M (B) N (C) L (D) O

- Sol.** (A) Consider the English alphabet :

20 Letters from beginning →

A B C D E **F** G H I J K L M N O P Q R S T U V W X Y Z

← 21 Letters from the end

By counting 21 letter from the end and 20 letters from the beginning, we get the following sequence in which **M** comes exactly middle.

F G H I J K L **M** N O P Q R S T

- Ex 7.** If it is possible to make a meaningful word with the first, the fourth, the seventh and the eleventh letters and the word **INTERPRETATION**, which of the following will be the third letter of that word ? If more than one such word can be made, give **M** as the answer and if no such word can be formed, give **X** as the answer.
 (A) T (B) E (C) X (D) M

- Sol.** (D) The first, the fourth, the seventh and the eleventh letters of the word **INTERPRETATION** are **I, E, R** and **T** respectively. The words formed are **RITE** and **TIRE**.

- Ex 8.** In the following scrambled letters are rearranged to form the name of a city, the city so formed is famous for its :
WILGARO
 (A) Locks (B) Steel Plant (C) Temples (D) Pottery

- Sol.** (C) They city is **GWALIOR** and it is famous for temples.

- Ex 9.** Choose the one word which can be formed from the letters of the given word.
RATIONALISATION
 (A) NATIONALISTIC (B) NATIONALIST (C) SITUATION (D) REALISATION

- Sol.** (B) The word **RATIONALISATION** contains all the letters of the word **NATIONALIST**. So, the word **NATIONALIST** can be formed.

NUMBER RANKING :

- Ex 10.** How many even numbers are there in the above sequence which are immediately preceded by an odd number and immediately followed by an even number ?

5 1 4 7 3 9 8 5 7 2 6 3 1 5 8 6 3 8 5 2 2 4 3 4 9 6

(A) 1

(B) 2

(C) 3

(D) 4

Sol. (C) We have to find the sequence QEE. O-Odd No. A odd number followed by two even numbers. 5 1 4 7 3 9 8 5 7 2 6 3 1 5 8 6 3 8 5 2 2 4 3 4 9 6.

Ex 11. Nitin was counting down from **32**. Sumit was counting upwards, the numbers starting from **1** and he was calling out only the odd numbers. What common number will they call out at the same time if they were calling out at the same speed ?

(A) 19

(B) 21

(C) 22

Sol. (D) Nitin : 32 31 30 29 28 27 26 25 24 23 22 21 20.....

Sumit : 1 3 5 7 9 11 13 15 17 19 21 23 25.....

Clearly, both will never call out the same number.

Ex 12. Thirty six vehicles are parked in a parking lot in a single row. After the first car, there is one scooter. After the second car, there are two scooter. After the third car, there are three scooters and so on. Work out the number of scooters in the second half of the row.

(A) 10

(B) 12

(C) 15

(D) 17

Sol. (C) Let C and S denote car and scooter respectively.

Then, the sequence of parking is

C S C S S C S S S C S S S S C S S S / S S C S S S S S S S C S S S S S S S C

The above sequence has been divided into two equal halves by a line.

Clearly, number of scooters in second half of the row = 2 + 6 + 7 = 15.

Ex 13. Manisha ranked sixteenth from the top and twenty ninth from the bottom among those who passed an examination. Six students did not participate in the competition and five failed in it. How many students were there in the class ?

(A) 40

(B) 44

(C) 50

(D) 55

Sol. (D) Number of students who passé = $(15 + 1 + 28) = 44$.

∴ Total number of students in the class = $44 + 6 + 5 = 55$

Ex 14. If all the number from **7** to **59**, which are divisible by **3** are arranged in descending order then which number will be at **10th** place from the bottom ?

(A) 36

(B) 39

(C) 30

(D) 27

Sol. (A) The required numbers in descending order are : 57, 54, 51, 48, 45, 42, 39, 36, 33, 30, 27, 24, 21, 18, 15, 12, 9. The **10th** number from the bottom is **36**.

Ex 15. Anil and Sunil are ranked seventh and eleventh respectively from the top in a class of **31** students. What will be their respective ranks from the bottom in the class ?

(A) 20th and 20th

(B) 24th and 20th

(C) 25th and 21st

(D) 26th and 22nd

Sol. (B) Number of students behind Anil in rank = $(31 - 7) = 24$

So, Anil is 25th from the bottom.

Number of students behind Sunil in rank = $(31 - 11) = 20$

So, Sunil is 21st from the bottom.

PRACTICE EXERCISE

1. Arrange the given words in alphabetical order and tick the one that comes last.
 (A) plane (B) plain (C) player (D) place

Directions : (2 to 3) In each of the following questions, a group of letters is given which are numbered 1, 2, 3, 4, 5 and 6. Below are given four alternatives containing combinations of these numbers. Select that combination of numbers so that letters arranged accordingly, form a meaningful word.

2. G A N I M E

1 2 3 4 5 6

(A) 1, 2, 4, 3, 6, 5 (B) 6, 3, 4, 1, 5, 2 (C) 5, 2, 1, 4, 3, 6 (D) 2, 5, 1, 4, 3, 6

3. C E L S M U

1 2 3 4 5 6

(A) 4, 6, 3, 5, 2, 1 (B) 5, 6, 4, 1, 3, 2 (C) 4, 6, 5, 2, 3, 1 (D) 5, 2, 3, 1, 6, 4

4. How many pair of letter are there in the word, 'EXPERIENCED' which have as many letters between them in the word as in alphabet?

(A) One (B) Three (C) Four (D) More than four

5. How many pair of letters are there in the word **REPURCUSSION** which have as many letters between them in the word as in the alphabet.

(A) Three (B) One (C) Two (D) More than three

6. Number of letters skipped in between adjacent letters in the series are multiples of 3. Which of the following series observes this rule?

(A) AELPZ (B) GKOTZ (C) LORUX (D) DHLPU

7. Select the series in which the letters skipped in between adjacent letters decrease in order

(A) AGMRV (B) HNSWA (C) NSXCH (D) SYDHK

8. If every even letter beginning from **B** is replaced by odd number beginning with 3. Which letter/ number will be the third to the left of the tenth number Letter counting from your right?

(A) M (B) S (C) 21 (D) 23

9. Which letter should be fourth to the right of twelfth letter from the right if the second half of the alphabet series is reversed?

(A) J (B) K (C) L (D) M

10. If it is possible to make a meaningful word with the second, the fourth, the fifth, the seventh and the eleventh letters of the word **DISRIBUTION** which of the following will be the third letter of that word? If no such word can be formed give **X** as answer.

(A) O (B) I (C) B (D) X

11. A meaningful nine-letter English word is formed using all the alphabets given in the grid below, starting with alphabet of a corner block, moving in clockwise direction and ending at the alphabet in the central grid. What is the fourth alphabet of the word ?

m	m	o
o	y	d
c	t	i

- (A) o (B) d (C) t (D) m

Directions : (12 to 13) In each of the following questions, find which one word can not be made from the letter's of the given word.

12. KALEIDOSCOPE
(A) SCALE (B) PADLOCK (C) PACKET (D) DIESEL
13. SUPERIMPOSABLE
(A) SPIRE (B) REPTILE (C) POSSIBLE (D) REPOSURE
14. In the following series of number's find out how many times, **1,3** and **7** have appeared together, **7** being in the middle and **1** and **3** on either side of **7** ?
2 9 7 3 1 7 3 7 7 1 3 3 1 7 3 8 5 7 1 3 7 7 1 7 3 9 0 6
(A) One (B) Two (C) Three (D) Four
15. In the following number series how many 8's are there which are exactly divisible by the numbers which are preceded and followed by it ?
8 2 4 5 1 7 2 8 4 8 4 2 2 8 2 6 9 8 4 5 4 8 3 2 8 4 3 1 8 3
(A) 1 (B) 2 (C) 3 (D) 4
16. In a Class Vidhya ranks **7th** from the top, Divya is **7** ranks ahead of Medha and **3** ranks behind Vidhya Sushma who is **4th** from the bottom, is **32** ranks behind Medha. How many students are there in the class ?
(A) 52 (B) 49 (C) 50 (D) None of these
17. Three persons **A, B** and **C** are Standing in a queue. There are five persons between **A** and **B** and eight persons between **B** and **C**. If there be three persons ahead of **C** and **21** persons behind **A**, what could be the minimum number of persons in the queue.
(A) 41 (B) 40 (C) 28 (D) 27
18. If the alphabets were written in the reverse order, which letter will be the fifth letter to the right of the fourteenth letter from the left.
(A) R (B) I (C) S (D) H

Directions : (19 to 25) Study the following information to answer the given questions :

- (i) In a class of boys and girls, Amar's rank is 12th and Meeta's rank is 8th.
 (ii) Amar's rank among the boys is 6th and Meeta's rank among girls is 3rd.
 (iii) In the class Meeta's rank is 52th from the other end.
 (iv) From the other end, Amar's rank among the boys is 26th.

19. How many boys are there in the class ?
 (A) 31 (B) 28 (C) 29 (D) Can't be determined
20. Which of the following is Meeta's rank among the girls from the other end ?
 (A) 23rd (B) 28th (C) 26th (D) Can't be determined
21. How many boys are there before Meeta ?
 (A) 4 (B) 5 (C) 3 (D) Can't be determined
22. How many boys are there between Amar and last rank (assuming it is a girl) in the class ?
 (A) 25 (B) 47 (C) 22 (D) Can't be determined
23. How many boys are there between Amar and Meeta ?
 (A) One (B) Two (C) Three (D) None of these
24. How many girls are there before Amar ?
 (A) 5 (B) 6 (C) 7 (D) Can't be determined
25. How many girls are there between Meeta and Amar ?
 (A) One (B) Two (C) Three (D) Can't be determined

ANSWERS

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13
Ans.	C	B	B	D	D	A	D	C	B	C	D	C	B
Que.	14	15	16	17	18	19	20	21	22	23	24	25	
Ans.	C	D	A	C	A	A	C	B	A	D	B	C	

You are required to put in the real signs in the given equation and then solve the question.

NOTE :

While attempting to solve a mathematical expression, proceed according to the rule **BODMA** - that is, Brackets, Of, Division, Multiplication, Addition, Subtraction.

Ex 1. $(48 - 12) \div 4 + 6 \div 2 \times 3 = ?$
 $(48 - 12) \div 4 + 6 \div 2 \times 3 = 36 \div 4 + 6 \div 2 \times 3$ (Solving Bracket)
 $= 9 + 3 \times 3$ (Solving Division)
 $= 9 + 9$ (Solving Multiplication)
 $= 18$ (Solving Addition)

Ex 2. If \times means \div , $-$ means \times , \div means $+$ and $+$ means $-$, then
 $(3 - 15 \div 19) \times 8 + 6 = ?$
 (A) 8 (B) 4 (C) 2 (D) -1

Sol. (C) Using the proper signs
 Expression $(3 \times 15 + 19) \div 8 - 6 = 64 \div 8 - 6 = 2$

Ex 3. If \times stand for 'addition'; $<$ for 'subtraction', \div stands for 'division', $>$ for 'multiplication', $=$ stands for 'equal to', $+$ for 'greater than and $=$ stands for 'less than', state which of the following is true ?
 (A) $3 \times 2 < 4 \div 16 < 2 + 4$ (B) $2 > 2 + 2 = 10 < 4 \div 2$
 (C) $3 \times 4 > 2 - 9 + 3 < 3$ (D) $5 \times 3 < 7 \div 8 + 4 \times 1$

Sol. (B) Using the proper notations in (B), we get the statement as
 $5 \times 2 \div < 10 - 4 + 2$ or $5 < 8$, which is true?

Direction (4 to 5) Are to be answered with reference to the following explanatory paragraph:

Suppose in view of a number system, a symbol system was substituted, which has digits

$\square, \wedge, Z, \Sigma, \wedge, 5, 6, X$ and Θ corresponding to the digits, 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 respectively. The digit \square is used in the same fashion as the digit 0 in the decimal system.

Ex 4. Which is equal to 10^3 ?

(A) $\wedge \square \square$

Sol. (A) $10^2 = 100$ means $\wedge \square \square$

Ex 5. What is the sum of $3 + a + \div + \Sigma$?

(A) $\wedge Z$

(B) $\wedge Z$

(C) Θ

(D) $\square \Sigma$

Sol. (A) $3 + \Sigma + \Sigma = 3 + 6 + 3 = 12$ means $\wedge Z$

- Ex 6.** Which one of the four interchanges in signs and numbers would make the given equation correct?
 $3 + 5 - 2 = 0$
 (A) + and -, 2 and 3 (B) + and -, 2 and 5 (C) + and -, 3 and 5 (D) None of these

Sol. (A) By making the interchanges given in (A) we get the equation as
 $2 - 3 + 3 = 0$ or $0 = 0$ which is true.
 By making the interchanges given in (B), we get the equation as
 $3 - 2 + 5 = 0$ or $6 = 0$, which is false.
 By making the interchanges given in (C), we get the equations as
 $5 - 3 + 2 = 4$ or $4 = 0$ which is not true.

- Ex 7.** Which of the following conclusions is correct according to the given expressions and symbols?
 A : > B : > C : ≠ D : =

E : ≤ F : <

Expression (pEq and qEr)

(A) pEr (B) pFr (C) eBp (D) rBq

Sol. (A) pEq and pEr $\Rightarrow p \leq q$ and $q \leq r \Rightarrow p \leq r \Rightarrow pEr$

- Ex 8.** If $A + D > C + E$, $C + D = 2B$ and $B + E > C + D$, it necessarily follows that
 (A) $A + B > 2d$ (B) $B + D > C + E$ (C) $A + D > B + E$ (D) $A + D > B + C$

Sol. (D) $A + D > C + E$

$$\Rightarrow A + D > (2B - D) + E \quad (\because C + D = 2B)$$

$$\Rightarrow A + D > (B + E) + (B - D)$$

$$\Rightarrow A + D > (C + D) + (B - D)$$

$$\Rightarrow A + D > B + C.$$

Direction : (9) In answering the questions below, use the following information :

$X \cup Y$ means divide X by Y

$X \uparrow Y$ means multiple X by Y

$X \# Y$ means subtract Y from X

$X \cap Y$ means add Y to X

- Ex 9.** One-fifth of one-tenth of two-third of a number X is given by

(A) $X \uparrow (1 \cup 5) \uparrow (1 \cup 10) \uparrow (2 \cup 3)$

(B) $X(1 \uparrow 5)(1 \uparrow 10)(2 \uparrow 3)$

(C) $X(1 \uparrow 5)(2 \uparrow 10)(2 \uparrow 3)$

(D) can't be determind

Sol. (A) $X \times \frac{1}{5} \times \frac{1}{10} \times \frac{2}{3} = X \uparrow (1 \cup 5)(1 \cup 10) \uparrow (2 \cup 3)$

Directions : (10 to 11) following symbols have been used :

- x stands for equal to
- < stands for not equal to
- stands for greater than
- + stands for not greater than
- > stands for less than
- = stands for not less than

Ex 10. If $p = q + r$, then it is possible that
 (A) $p \times q - r$ (B) $p + q - r$ (C) $p - q - r$ (D) $p < q < r$

Sol. (D) With the notations given, we have :
 $p = q + r$ means $p \geq p \leq r$
 From option (A), $p \times q - r$ means $p = q > r$, this is not true.
 From option (B), $p + q - r$ means $p \leq q > r$, this is not true.
 From option (C), $p - q - r$ means $p > q > r$, this is not true.
 From option (D), $p < q < r$ means $p \neq q \neq r$, this is true,

Ex 11. If $p > q \times r$, then it is possible that
 (A) $p + r + q$ (B) $p = r - q$ (C) $p \times q + r$ (D) $p = q - r$

Sol. (A) With the notations given, we have :
 $p > q \times r$ means $p < q = r$
 From option (A), $p + r + q$ means $p \leq r \leq q$, this is true.
 From option (B), $p = r - q$ means $p \geq r > q$, this is not true.
 From option (C), $p \times q + r$ means $p = q < r$, this is not true.
 From option (D), $p = q - r$ means $p \geq q > r$, this is not true.

Directions : (12 to 15) In the following questions, the symbols, \otimes , \oplus , $=$, $*$ and $_$ are used with the following meanings

- 'A \otimes B' means 'A is greater than B';
- 'A \oplus B' means 'A is greater than or equal to B';
- 'A = B' means 'A is equal to B';
- 'A * B' means 'A is smaller than B';
- 'A _ B' means 'A is either smaller than or equal to B';

Now in each of the following questions, assuming the given statements to be true, find which of the two conclusions I and II given below them is/are definitely true.

Give answer (A) if only conclusion I is true : (B) if only conclusion II is true ; (C) if either I or II is true ; (D) if neither I nor II is true.

Ex 12. Statements : $S \otimes T, M *_ K, T = K$
Conclusions: I. $T \oplus M$
 II. $T = M$

Sol. (C) Given statements : $S > T, M \leq K, T = K$.
 Relation between T and M :
 $T = K, K \geq M \Rightarrow T \geq M \Rightarrow T > M$ or $T = M$
 $\Rightarrow T \oplus M$ or $T = M$
 So, either I or II is true.

Ex 13. Statements : $S *_ M, M \oplus L, L \oplus P$

Conclusion : I. $S = P$
 II. $S \neq L$

- Sol.** (D) Given statements : $S < M, M > L, L \geq P$
 I. Relation between S and P :
 $S < M, M > L, L \geq P \Rightarrow$ no definite conclusion.
 So, I is not true.
 II. Relation between S and L :
 $S < M, M > L \Rightarrow$ no definite conclusion.
 So, II is also not true.

Ex 14. Statements : $U = V, V \neq N, R \leq U$
Conclusions : I. $R \neq N$
 II. $U \geq N$

- Sol.** (A) Given statements : $U = V, V < N, R \leq U$
 I. Relation between R and N :
 $R \leq U, U = V, V < N \Rightarrow R < N$ i.e. $R \neq N$
 So, I is true.
 II. Relations between U and N :
 $U = V, V < N \Rightarrow U < N$ i.e. $U \neq N$
 So, $U \geq N$ i.e. $U \geq N$ is not true.
 Thus, II is false.

Ex 15. Statements : $E \geq U, C \neq E, C \geq B$
Conclusions : I. $U = C$
 II. $E \geq B$

- Sol.** (B) Given statements : $E \geq U, C < E, C > B$
 I. Relation between U and C :
 $U \leq E, E > C \Rightarrow$ no definite conclusion.
 So, I is not true.
 II. Relation between E and B :
 $E > C, C > B \Rightarrow E > B$ i.e. $E \geq B$
 So, II is true.

PRACTICE EXERCISE

1. It being given that : > denotes +, < denotes -, + denotes ÷, - denotes =, = denotes 'less than' and × denotes 'greater than', find which of the following is a correct statement.
- (A) $3 + 2 < 4 = 9 + 3 < 1$ (B) $3 > 2 > 4 = 18 + 3 < 2$
 (C) $3 > 2 < 4 \times 8 + 4 < 2$ (D) $3 + 2 < 4 \times 9 + 3 < 3$

Direction : (2) In the following question, different alphabets stand for various symbol as indicated below :

Addition : **O** Substation : **M** Multiplication : **A**
 Division : **Q** Equal to : **X** Greater than : **Y**
 Less than : **Z**

Out of the four alternatives given in the question, only one is correct/

2. (A) 1 O 1 Q 1 M 1 Y 3 Q 1 (B) 2 Q 1 O 20 A 1 Z 6 A 4
 (C) 3 O 2 O 10 Q 2 X 10 A 2 (D) 5 Q 5 A 5 O 5 Y 5 A 2
3. If 'P' means '+'; 'R' means 'x'; 'S' means '-'; 'T' means '÷' then what is the value of $5 R 9 P 7 S 9 T 3 P 6 = ?$
- (A) 54 (B) 128 (C) 59 (D) 55
4. If ÷ means +, - means ×, × means - and + means ×, then
- $$\frac{(32 \times 8) - 8 \times 2}{4 + 18 \times 8 + 9 \div 1} = ?$$
- (A) 0 (B) 1 (C) 12 (D) None of these
5. If L denoted ÷, M denotes x, P denotes + and Q denotes -, then which of following statements is true ?
- (A) $32 P 8 L 16 Q 4 = -\frac{3}{2}$ (B) $6 M 18 Q 26 L 13 P 7 = \frac{173}{13}$
 (C) $11 M 34 L 17 Q 8 L 3 = \frac{38}{3}$ (D) $9 P 9 L 9 Q 9 M 9 = - 71$

Directions : (6 to 8) Answer the questions on the basis of the information given below. If '\$' represents '+', '*' represents '-', '#' represents 'x', '@' represents '÷' then answer the following questions bases on the above given representation.

6. What is the value of $4 \# 3 \$ 10 @ 5 \$ 8 \# 2 \star 18 ?$
- (A) 10 (B) 12 (C) 6.8 (D) 11.2
7. Which of the following has the value equivalent of $5 \$ 6 \# 2 \$ 8 @ 4 ?$
- (A) $4 \# 7 \star 12 \$ 2 \# 1$ (B) $8 \# 2 \star 3 \$ 6 @ 3$ (C) $8 @ 2 \star 3 \$ 6 \# 3$ (D) $4 \$ 7 \star 12 \$ 2 \# 1$

8. Which of the given values is greater than $7 \$ 3 \star 2 \$ 12 @ 4$?
 (A) $4 \# 3 \$ 6 @ 3 \star 4$ (B) $5 \# 2 \star 8 @ 4 \$ 3 \# 3 \star 7$
 (C) $6 \# 3 \star 18 @ 2 \$ 1 \# 2$ (D) $9 @ 3 \$ 6 \# 2 \star 2 \# 1$
9. If $\square \triangle = 7$, $\triangle = 27$, $\square = 81$ then $\square \triangle = ?$
 (A) 690 (B) 689 (C) 780 (D) 789
10. Correct the following equations by interchanging two signs :
 $16 - 21 \div 7 \times 6 + 3 = 31$
 (A) - and + (B) + and \times (C) \div and + (D) \div and \times
11. Find the correct inference according to given premises and symbols :
 A : Not greater than B : Greater than C : Not equal to
 D : Equal to E : Not less than F : Less than
 (A) pBm (B) pDm (C) pEm (D) pF,
12. If $A + B > C + D$, $B + E = 2C$ and $C + D > B + E$, it necessarily follows that :
 (A) $A + B > 2C$ (B) $A + B > 2D$ (C) $A + B > 2E$ (D) $A > C$

Direction : (13) In answering the questions below, use the following information :

X \cup Y means divide X by Y
X \uparrow Y means multiply X by Y
X $\#$ Y means subtract Y from X
X \cap Y means add Y to X

13. A receives X number of balls. He gives 10% of his ball to B, 15% of his ball to C and 12% of his balls to D. How many balls does he have with him now ?
 (A) $X \cap X \uparrow (10 \cup 100) \cap X \uparrow (15 \cup 100) \# X \uparrow (12 \cup 100)$
 (B) $X \cap X \uparrow (10 \uparrow 100) \cap X (15 \uparrow 100) \cap X \uparrow (1 \uparrow 100)$
 (C) $X \# [X \uparrow (10 \cup 100) \cap X \uparrow (15 \cup 100) \cap X \uparrow (12 \cup 100)]$
 (D) None of these

Directions : (14 to 15) Some symbols are given below. These symbols denote some relationship between number

Δ = greater than
 θ = equal to
 \square = not less than
 \times = less than
 $+$ = not greater than
 ϕ = not equal to

14. $a \times b \theta c$ does not mean
 (A) $a \Delta b \phi c$ (B) $a + b \theta c$ (C) $a \phi b \theta c$ (D) $b \theta c \square a$

15. $c + b \times a$ means

(A) $a \times b \theta c$

(B) $c \Delta b \Delta a$

(C) $c \times b \times a$

(D) $b \theta c \Delta a$

Directions : (16 to 17) the following symbols have been used L

x : Stands for equal to

$<$: Stands for not equal to

$-$: Stands for greater than

$+$: Stands for not greater than

$>$: Stands for less than

$=$: Stands for not less than

16. If $p \times q \times r$, then it is not possible that :

(A) $p - q = r$

(B) $p = q + r$

(C) $p + q + r$

(D) $p = q = r$

17. If $p - q + r$, then it is possible that :

(A) $p = q > r$

(B) $p < q - r$

(C) $p + q \times r$

(D) $p \times q \times r$

Directions : (18 to 22) In the following questions the symbols \$, @, \subset , \supset and \neq are used with the following meaning.

$A \$ B$ means A is greater than B

$A @ B$ means A is either greater than or equal to B

$A \subset B$ means A is equal to B

$A \supset B$ means A is smaller than B

$A \neq B$ means A is either smaller than or equal to B

Now in each of the following questions assuming the given statements to be true, find which of the two conclusions I and II given below them is / are definitely true ? Give answer (A) if only conclusion I is true, (B) if only conclusion II is true (C) if neither I nor II is true (D) if both I and II are true.

18. Statements : $P @ Q M \neq N, N \subset Q$

Conclusions : I. $P \$ M$

II. $N \neq P$

19. Statements : $D \subset X, F @ Y, D \$ F$

Conclusions : I. $X @ Y$

II. $Y \neq D$

20. Statements : $M \subset P, S \$ T, M @ T$

Conclusions : I. $T \neq P$

II. $S \supset T$

21. Statements : $U \supset V, X \$ W, U \supset W$

Conclusions : I. $W \$ V$

II. $U \subset X$

22. Statements : $G \neq H, J \neq K, H \subset K$

Conclusions : I. $G \neq K$

II. $J \subset K$

Directions : (23 to 25) In the following questions find out the digits corresponding to the letters representing those digits in the multiplication give below.

$$\begin{array}{r} 9bc \\ \underline{35d} \\ 3a4b \\ 4a35 \\ \underline{2961} \\ 34a39b \end{array}$$

23. b stands for :
 (A) 6 (B) 7 (C) 8 (D) 9
24. c stands for :
 (A) 7 (B) 6 (C) 5 (D) 4
25. d stands for :
 (A) 2 (B) 3 (C) 4 (D) 5

ANSWERS

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13
Ans.	C	B	D	B	D	B	C	D	B	B	D	A	C
Que.	14	15	16	17	18	19	20	21	22	23	24	25	
Ans.	A	C	A	A	B	C	A	C	A	C	A	C	

Directions : (1 to 5) Read the following information carefully and answer the questions given below it.

- I. Five professors (Dr. Joshi, Dr. Davar, Dr. Natrajan, Dr. Choudhary and Dr. Zia) teach five different subjects (zoology, physics, botany, geology and history) in four universities (Delhi, Gujarat, Mumbai, and Osmania). Do not assume any specific order.
- II. Dr. Choudhary teaches zoology in Mumbai University.
- III. Dr. Natrajan is neither in Osmania University nor in Delhi University and he teaches neither geology nor history.
- IV. Dr. Zia teaches physics but neither in Mumbai University nor in Osmania University.
- V. Dr. Joshi teaches history in Delhi University.
- VI. Two professors are from Gujarat University.
- VII. One professor teaches only one subject and in one University only.

- Ex 1.** Who teaches geology ?
 (A) Dr Natrajan (B) Dr. Zia (C) Dr. Davar (D) Dr. Joshi
- Ex 2.** Which university is Dr. Zia from ?
 (A) Gujarat (B) Mumbai (C) Delhi (D) Osmania
- Ex 3.** Who teaches botany ?
 (A) Dr. Zia (B) Dr. Davar (C) Dr. Joshi (D) Dr. Natrajan
- Ex 4.** Who is from Osmania University ?
 (A) Dr. Natrajan (B) Dr. Davar (C) Dr. Joshi (D) Dr. Zia
- Ex 5.** Which of the following combinations is correct ?
 (A) Delhi University - Dr. Zia (B) Dr. Choudhary - geology
 (C) Dr. Davar - Mumbai University (D) Dr. Natrajan - Gujarat University.

Sol. : (1 to 5)

From the given information in the question :

From II, we get Dr. Choudhary teaches zoology in Mumbai University.

From III, We get Dr. Natrajan is neither in Osmania nor in Delhi University. Therefore, he will be either at Mumbai or Gujarat University. Similarly, as he teaches neither geology nor history, therefore, he must be teaching physics or botany. (1)

From IV,

Dr. Zia → Physics but as he is not teaching in either Mumbai or Osmania University, he must be teaching either in Delhi or Gujarat University (2)

From V, we get Dr. Joshi teaches history in Delhi University

From (1) and (2), we conclude that Dr. Natrajan teaches botany.

And from (1), (2) and VI, we get both Natrajan and Zia teach in Gujarat University.

Names	University	Subject
Dr. Joshi	Delhi	History
Dr. Davar	Osmania	Geology
Dr. Natrajan	Gujarat	Botany
Dr. Choudhary	Mumbai	Zoology
Dr. Zia	Gujarat	Physics

Who among them is the latest ?

- (A) Ramesh (B) Karan (C) Vinay (D) Cannot be determined

Sol. (D) In this questions ranking of Karan is not defined. Consequently, either Ram or Karan Occupies the top position with regard to height. Hence, option (d) is the correct choice.

Directions (7 to 11) Read the following information carefully and answer the questions given below it :

There are five men A,B,C,D and E and six women P,Q,R,S,T and U.A, B and R are advocates; C,D,P,Q and S are doctors and the rest are teachers. Some teams are to be selected from amongst these eleven persons subject to the following conditions :

A, P and U have to be together.

B cannot go with D or R.

E and Q have to be together

C and T have to be together.

D and P cannot go together.

C cannot go with Q.

Ex 7. If the team is to consist of two male advocates, two lady doctors and one teacher, the members of the team are

- (A) A B P Q U (B) A B P U S (C) A P R S U (D) B E Q R S

Sol. (B) The made advocates are A and B, lady doctors are P, Q and S ; teachers are E, T and U. Now A and B will be selected/

A, P and U have to be together. Now, we have to select one lady doctor more. It can be Q or S. But Q and E have to be together. Since E is not selected, so S will be selected. Thus, the team is A B P U S.

Ex 8. If the team is to consist of one advocate, two doctors, three teachers and C may not go with T, the members of the team are :
 (A) A E P Q S U (B) A E P Q T U (C) B E Q S T U (D) E Q R S T U

Sol. (B) The advocates are A, B are R; doctors are C, D P, Q, S; teachers are E, T and U. The team consists of 3 teachers i.e. E, T, U. Now A, P and U have to be together. E and Q have to be together. Thus, the team is A E P Q T U.

Ex 9. If the team is to consist of one male advocate, one male doctor, one lady doctor and two teachers, the members of the team are :
 (A) A C P T U (B) A D E P T (C) A D E P U (D) B C E Q U

Sol. (A) The male advocates are A and B; male doctors are C and D; lady doctors are P, Q and S; teachers are E, T and U. If A is selected, P and U will be selected. D and P cannot go together. So, a male doctor C will be selected. C and T have to be together. Thus, the team is A C P T U. If B is selected, D will not be selected. So, male doctor C will be chosen. C and T have to be together. Now, the second teacher to be selected is E or U. But, U cannot go without A. So, E will be selected. E and Q have to be together. Thus, the team can also be B C E Q T.

Ex 10. If the team is to consist of one advocate, three doctors and one male teacher, the members of the team are:
 (A) A D P S U (B) C D R S T (C) D E Q R S (D) D E Q R T

Sol. (C) The advocates are A, B and R; the doctors are C, D P, Q and S; male teachers is E. Clearly, E will be selected. E and Q have to be together. C and Q cannot be together. So, C will not be selected. P also cannot be selected because U is not selected. So, two other doctors D and S will be selected. P is not selected, So A will not be selected. D is selected, so B cannot be selected. Thus, the team is D E Q R S.

Ex 11. If the team is to consist of two advocates, two doctors, two teachers and not more than three ladies, the members of the team are :
 (A) A B C P T U (B) A C P R T U (C) A E P Q R T (D) D C E Q R T

Sol. (a) A C P R T U and A E P Q R T are wrong because each of these combinations consist of four ladies. B C E Q R T is correct because B and R cannot to gather.

Direction: (12 to 15) Read the following paragraph carefully

Four workmen A, B, C and D and three men E, F and G play bridge, a game four players.

(i) The group consists of three married couples and a widow.

(ii) Spouses are never partners in game.

(iii) No more than one married couple ever plays in the same game.

(iv) One day they played four games as follows.

A and E versus B and F.

A and G versus D and F.

B and C versus F and G.

C and E versus D and G.

Ex 12. Whom is E married to ?
 (A) A (B) B (C) C (D) D

- Ex 13.** Whose if F married to ?
 (A) A (B) B (C) C (D) D
- Ex 14.** Whose is G marries to ?
 (A) A (B) B (C) C (D) d
- Ex 15.** Which of the following is a widow ?
 (A) A (B) B (C) C (D) D

Sol. (12 to 15):

From (iv), is married ether to A or to C. If F is married to A, Then G is married to B or to C. If G is marries to B, then E is married to D ; if G is married to C, then E is married to B or to D. If F is married to C, then G is married to B ; then E is married to D. Hence, the married couples are : FA, GB, ED or FA, GC, EB of FA, GC, ED or FC, GB, ED. Of these, only FA, GB, ED does not contradict any of the statements.

Sol 12. (D) E is married to D.

Sol 13. (A) F a is married to A.

Sol 14. (B) G is married to B.

Sol 15. (C) C is widow.

- Ex 16.** A vagabond runs out of cigarettes. He searches for the stubs, having learnt that 7 stubs can make a new cigarette, good enough to be smoked, he bathers 49 stubs, If has smokes 1 cigarette every three - quarters of an hour, how long will his supply last ?
 (A) 5.25 hr (B) 6 hr (C) 4.5 hr (D) 3 hr

Sol. (B) He has got = $\frac{49}{7} = 7$ cigarettes.

\therefore The duration of time he will take to smoke these 7 cigarettes = $7 \times \frac{3}{4}$ hr = 5.25 hr (i.e. hr and 1 min). Now

note that after he has smoked these 7 cigarettes, he will collect 7 more stubs (one from each), form which

he will be able to make another cigarette. This will take him another $\frac{3}{4}$ hr (45 min) to smoke. Therefore, total

time taken = 6 hr.

Direction : (17 to 18) Read the following information and answer the questions that follow.

There are 70 clerks working with M/s. Jha Lal Khanna & Co. chartered accountant, of which 30 are female.

- I. 30 clerks are married.
- II. 24 clerks are above 25 years of age
- III. 19 Married clerks are above 25 years of age ; among them 7 are males.
- IV. 12 males are above 25 years of age
- V. 15 males are married.

Ex 17. How many unmarried girls are there ?
(A) 12 (B) 15 (C) 18 (D) 10

Ex 18. How many of these unmarried girls are above 25 ?
(A) 12 (B) 15 (C) 4 (D) 0

Sol. (17 to 18) : From the given data, we can make the following table with the help of which rest of the questions can be solved very easily.

	Male (40)	Female (30)
Above 25		
Married	7	12
Unmarried	5	0
Below 25		
Married	8	3
Unmarried	20	15
Total	40	30

Sol 17. There are 15 unmarried girls.

Sol 18. In these 15 unmarried girls no one is above 25.

PRACTICE EXERCISE

Direction : (1 to 5) Study the following information carefully and answer then questions given below it :

There are five friends A, B, C, D and E. Two of them are businessmen while the other three belong to different occupations viz. medical, engineer and legal. One businessman and the lawyer stay in the same locality S, while the other three stay in three different localities P, Q and R. Two of these five persons are Hindus while the remaining three come from three different community's viz. Muslim Christian and Shikh. The lawyer is the oldest in age while one of the businessmen who runs a factory is the youngest. The other businessman is a cloth merchant and age wise lies between the doctor and the lawyer. D is a cloth merchant and stays in locality S while E is a Muslim and stays in locality R. The doctor is a Christian and stays in locality P, B is a Shikh while A is a Hindu and runs a factory.

1. Who stays in locality Q ?
(A) A (B) B (C) C (D) E
2. What is E's occupation ?
(A) Business (B) Engineer (C) Lawyer (D) Doctor

3. Age wise who among the following lies between A and C ?
 (A) Lawyer (B) Doctor (C) Cloth merchant (D) Engineer
4. What is B's occupation ?
 (A) Business (B) Engineer (C) Lawyer (D) Doctor
5. What is C's occupation ?
 (A) Doctor (B) Lawyer (C) Engineer (D) Business

Directions : (6 to 10) Read the information given below and answer the questions.

The age and height of six children in a class are as follows :-

- (i) A is taller and older than B but shorter and younger than C.
 (ii) D is taller than E who is not as tall as B.
 (iii) The oldest is the shortest.
 (iv) The youngest would be fourth if the children stood in a line according to their height and one started counting from the tallest.
 (v) D is younger than F but older than E who is older than C.

6. Who among them is the tallest ?
 (A) B (B) E (C) C (D) Data inadequate
7. Whose is older than B but younger than C ?
 (A) F (B) D (C) A (D) Data inadequate
8. Which of the following statements is definitely true ?
 (A) D is the most old person (B) B has the max height
 (C) A is older than D (D) F is the shortest
9. Which of the following is the correct order of height in descending order ?
 (A) A, C, D, B, E, F (B) F, D, E, C, A, B (C) D, C, A, B, E, F (D) C, D, A, B, E, F
10. Whose Rank in height cannot be positioned definitely ?
 (A) B (B) D (C) C (D) E

Directions (11 to 15) Study the information given below and answer the questions that follow.

- (i) Six plays P, Q, R, S, T and U are to be organised from Monday to Saturday i.e. 10 to 15 one play each day.
 (ii) There are two plays between R and S and one play between P and R.
 (iii) There is one play between U and T and T is to be organised before U.
 (iv) Q is to be organised before P, not necessarily immediately.
 (v) The organisation does not start with Q.

11. The organisation would start from which play ?
 (A) P (B) S (C) T (D) None

12. One which data is play T be organised ?
 (A) 10th (B) 11th (C) 12th (D) None
13. The organisation would end with which play ?
 (A) P (B) Q (C) S (D) None
14. Which day is play Q organised ?
 (A) Tuesday (B) Wednesday (C) Thursday (D) None
15. Which of the following is the correct sequence of organising plays ?
 (A) PTRUQS (B) QSTURP (C) SUTROP (D) None

Directions : (16 to 20) Study the following information carefully and answer the questions that follow :

A team of five is to be selected from amongst five boys A, B, C, D and E and four girls P, Q, R and S. Some criteria for selections are :

A and S have to be together

P cannot be put with R.

D and Q cannot go together.

C and E have to be together.

R cannot be put with B.

Unless otherwise stated, these criteria are applicable to all the questions below :

16. If two of the members have to be boys, the team will consist of :
 (A) A B S P Q (B) A D S Q R (C) B D S R Q (D) C E S P Q
17. If R one of the members, the other members of the team are :
 (A) P S A D (B) Q S A D (C) Q S C E (D) S A C E
18. If two of the members are girls and D is one of the members, the members of the team other D are :
 (A) P Q B C (B) P Q C E (C) P S A B (D) P S C E
19. If A and C are members, the other members of the team cannot be :
 (A) B E S (B) D E S (C) E S P (D) P Q E
20. In including P at least three members are girls, the members of the team other than P are :
 (A) Q S A B (B) Q S B D (C) Q S C E (D) R S A D

Directions : (21 to 25) Read the following information carefully and answer the questions given below.

- I. There is a family of six persons- L, M, N, O, P and Q. They are professor, businessman, chartered account, bank manager, engineer and medical representative, not necessarily in that order.
- II. There are two married couples in the family.
- III. O, the bank manager is married to the lay professor.
- IV. Q, the medical representative, is the son of M and brother of P.
- V. N, the chartered accountant, is the daughter - in law of L.
- VI. The businessman is married to the chartered accountant.
- VII. P is an unmarried engineer.
- VIII. L is the grandmother of Q.

21. How is P related to Q.
(A) Brother (B) Sister (C) Cousin (D) Either brother or sister
22. Which of the following is the profession of M ?
(A) Professor (B) Chartered accountant
(C) Businessman (D) Medical representative
23. Which of the following is the profession of L ?
(A) Professor (B) Chartered accountant (C) Businessman (D) Engineer
24. Which of the following is one of the couples ?
(A) QO (B) OM (C) PL (D) None of these
25. How is O related to Q ?
(A) Father (B) Grandfather (C) Uncle (D) Brother
26. You have 12 similar looking coins. 11 of them weigh the same. One of them has a different weight, but you don't know whether it is heavier or lighter. You also have a scale. You can put coins on both sides of the scale and it'll tell you which side is heavier or will stay in the middle if both sides weigh the same. What is the minimum number of weighing required to find out the odd coin.
(A) 3 (B) 4 (C) 5 (D) 6

ANSWERS

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13
Ans.	A	B	D	C	A	D	C	D	D	B	B	C	A
Que.	14	15	16	17	18	19	20	21	22	23	24	25	26
Ans.	A	D	A	D	C	D	A	D	C	A	D	B	B

Directions : (1 to 5) Read the following information carefully and answer the questions given below it.

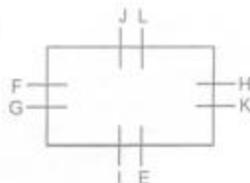
- I. Eight persons, E, F, G, H, I, J, K and L are seated around a square table - two on each side.
- II. There are three lady members and they are not seated next to each other.
- III. J is between L and F.
- IV. G is between I and F.
- V. H, a lady member, is second to the left of J.
- VI. L, a male member, is seated opposite of E, a lady member.
- VII. There is lady member between F and I.

- Ex 1.** Who among the following is seated between E and H ?
 (A) F (B) I (C) J (D) None of these
- Ex 2.** How many persons are seated between K and F ?
 (A) One (B) Two (C) Three (D) Cannot to determined
- Ex 3.** Who among the following are the three lady members ?
 (A) E, G and J (B) E, H and G (C) G, H and J (D) Cannot be determined
- Ex 4.** Who among the following is to the immediate left of F ?
 (A) G (B) I (C) J (D) Cannot be determined
- Ex 5.** Which of the following is true about J ?
 (A) J is a male member (B) J is a female member
 (C) Sex of J cannot be determined (D) Position of J cannot be determined

Sol. (1 to 5) : On the basis of the given information, we arrive at the following sting plan the does not violate any of the given conditions.

And on the basis of the above figure rest of the question are solved as follows :

1. (D) K is seated between E and H.
2. (C) Three persons H, L and J are seated between K and F.
3. (B) The three lady members are E, H and G.
4. (C) J is to the immediate left of F.
5. (A) Clearly, J is a male member.



Direction : (6 to 10) Read the following information carefully and answer the questions given below it. In a car exhibition, seven cars of seven different brands, viz Cadillac, Ambassador, Fiat, Maruti, Mercedes, Bedford and Fargo were displayed in a row, facing east direction such that :

- I.** Cadillac was to the immediate right of Fargo.
- II.** Fargo was fourth to the right of Fiat.
- III.** Maruti was between the Ambassador and Bedford.
- IV.** Fiat, which was third to the left of Ambassador, was at one of the extreme ends.

- Ex 6.** Which of the following was the correct position of the Mercedes ?
 (A) To the Immediate right of Fargo (B) To the Immediate left of Bedford
 (C) Between Bedford and Fargo (D) Fourth to the right of Maruti
- Ex 7.** Which of the following is definitely true ?
 (A) Fargo is between Ambassador and the Fiat (B) Cadillac is to the immediate left of Mercedes
 (C) Fargo is to the immediate right of Cadillac (D) Maruti is fourth to the right of Mercedes
- Ex 8.** Which cars are neighbors of Cadillac ?
 (A) Ambassador and maruti (B) Maruti and Fiat
 (C) Fiat and Mercedes (D) Mercedes and Fargo
- Ex 9.** Which of the following is definitely true ?
 (A) Maruti is to the immediate left of Ambassador
 (B) Bedford is to the immediate left of Fiat.
 (C) Bedford is at one of the ends
 (D) Fiat is second to the right of Maruti,
- Ex 10.** Which of the following groups of cars is to the right of the Ambassador ?
 (A) Cadillac, Fargo and Maruti (B) Maruti, Bedford and Fiat
 (C) Mercedes, Cadillac and Fargo (D) Bedford, Cadillac and Fargo

Sol. (6 to 10) : According to the given question,

From I }
 Fargo }(i)
 Cadillac }

From II }
 _____ Fiat }(ii)
 _____ }
 _____ }
 _____ Fargo }
 _____ Cadillac }

From III, we get
 _____ Fiat
 _____ Bedford
 _____ Maruti
 _____ Ambassador
 _____ Fargo
 _____ Cadillac
 _____ Mercedes [logically it has to be here only]

From IV

_____ Fiat

_____ Ambassador

_____ Fargo

Hence, the sequence of cars is as follows :

Fiat, Bedford, Maruti, Ambassador, Fargo, Cadillac, Mercedes/

6. (D) Clearly, Maruti is in the third place and Mercedes in the seventh, i.e. Mercedes is four to the right of Maruti.
7. (B) Clearly, Cadillac is in the sixth place, to the immediate left of Mercedes, which is in the seventh place (from the top).
8. (D) On the sides of the Cadillac are the Fargo and the Mercedes.
9. (A) Clearly, Maruti is in third place (from top), and is to the immediate left of the Ambassador, which is in the fourth place.
10. (C) To the right of Ambassador are Fargo, Cadillac and Mercedes.

Directions : (11 to 12) Answer the questions based on the following information.

6 men R, S, T, U, V and W set around circular table playing cards. It was noticed that no two men the initial letters of whose names are adjacent in the alphabetical order, sat next to each other, U was opposite of R. V was not to the immediate right of R.

Ex 11. Who sat to the immediate left of R ?

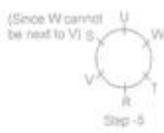
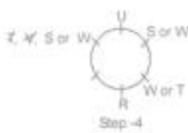
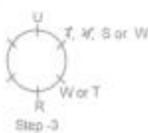
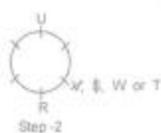
- (A) S (B) T (C) V (D) W

Ex 12. Who sat to the immediate right of R ?

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

Sol. (11 to 12):

- Step - 1.** Circular table - 6 men is 6 positions.
- 2.** People with names in alphabetical order do not sit next to each other.
- 3.** U is opposite of R.
- 4.** Also V did not sit on the immediate right of R.



11. (C) Clearly, V is to immediate left of R.
12. (B) Clearly, T sat to immediate right of R.

Ex 13. In the Olympic games, flags of 6 nations were hoisted in the following way. The flag of America was to the left of Indian Tricolour and to the right of the flag of France. The flag of Australia was on the right of the Indian flag but to the left of the flag of Japan, which was to the left of the flag of China. Find the two flags which are in the centre.

- (A) America and India (B) Japan and Australia
(C) America and Australia (D) India and Australia

Sol. (D) Clearly, the correct sequence is :
France, America, India, Australia, Japan, China.
The two flags in the centre are of India and Australia.

PRACTICE EXERCISE

Directions (1 to 5) : Study the following information carefully and answer the questions given below it:

- (i) Eleven students A, B, C, D, E, F, G, H, I, J and K are sitting in a row of the class facing the teacher.
(ii) D, Who is to the immediate left of F, is second to the right of C.
(iii) A, is second to the right of E, who is at one of the ends.
(iv) J is the immediate neighbor of A and B and third to the left of G.
(v) H is to the immediate left of D and third to the right of I.

1. Who is sitting in the middle of the row ?
(A) C (B) I (C) B (D) G
2. Which of the following groups of friends is sitting to the right of G ?
(A) IBJA (B) ICHDF (C) CHDF (D) CHDE
3. In the above sitting arrangement, which of the following statements is superfluous?
(A) i (B) ii (C) iii (D) None is superfluous
4. Which of the following statements is true in the context of the above sitting arrangements ?
(A) There are three students sitting between D and G.
(B) G and C are neighbors sitting to immediate right of H.
(C) B is sitting between J and I.
(D) K is sitting between A and J.

5. If E and D, C and B, A and H & K and F interchange their positions, which of the following pairs of students is sitting at the end ?
 (A) D and E (B) E and F (C) D and K (D) K and F

Directions : (6 to 10) Study the given information carefully and answer the questions that follow :

Seven friends Kamla, Manish, Rohit, Amit, Gaurav, Pritam and Priya are sitting in a circle. Kamla, Manish, Rohit, Amit, Gaurav, Pritam and Priya are sitting in a circle. Kamla, Manish, Rohit, Amit, Pritam and Priya are sitting at equal distances from each other.

Rohit is sitting two places right of Pritam, who is sitting one place right of Amit. Kamla forms an angle of 90 degrees from Gaurav and an angle of 120 degrees from Manish. Manish is just opposite to Priya and is sitting on the left of Gaurav.

6. Who is the only person sitting between Rohit and Manish ?
 (A) Pritam (B) Amit (C) Gaurav (D) Kamla
7. Gaurav is not sitting at equal distances from
 (A) Rohit and Pritam (B) Amit and Kamla (C) Manish and Pritam (D) All of the above
8. Gaurav is sitting of Priya.
 (A) to the left (B) to the right (C) two places right (D) None of these
9. The angle between Gaurav and Manish in the clockwise direction is
 (A) 150° (B) 180° (C) 210° (D) None of these
10. Which of the following statements is not correct ?
 (A) Pritam is between Manish and Kamla
 (B) Manish is two places away from Priya
 (C) Gaurav is sitting opposite to Pritam
 (D) All of the above

Directions : (11 to 14) A, B, C and D are to be seated in a row. But C and D cannot be together. Also B cannot be at the third place.

11. Which of the following must be false ?
 (A) A is at the first place (B) A is at the second place
 (C) A is at third place (D) A is at the fourth place
12. If A is not at the third place, then C has which of the following options ?
 (A) The first place only (B) The third place only
 (C) The first and third place only (D) Any of the places
13. If A and B are together, then which of the following must be necessarily true ?
 (A) C is not at the first place (B) A is at the third place
 (C) D is at the first place