

SERIES COMPLETION

The questions in this section may be given by writing the number continuously, plus $-1, 2, 3, \dots$, minus $1, 2, 3, \dots$, square, cube, multiply with $2, 3, 4, \dots$, divided by $2, 3, 4, \dots$, alternatively or by skipping some numbers. The students should read the questions carefully and fill in the blanks with suitable numbers from the given choices.

1. **1, 2, 6, 10, 11, 12, 16, 20, 21, 22, 26** —

Sol. In this series 1st two letters are continued, then plus -4 , twice then two letter are continued, then plus -4 , twice. Hence the answer is 30.

2. **2, 4, 8, 16, 32, 64, 128, 256** —

Sol. In this series the number is every time multiplied by 2 to get the consecutive number. Hence the answer is **512**.

3. **4, 16, 12, 48, 44, 176, 172** —

Sol. In this series the 1st number is multiplied by 4, then minus -4 and so on for every consecutive number. Hence the answer in 688

5. **8, 4, 40, 20, 200, 100, 1000, 500** —

Sol. In this series every number is multiplied by 5 to bring the alternative number. Hence the answer is 5000.

6. **1, 2, 4, 7, 11, 16, 22, 29, 37** —

Sol. This series can be observed as under.

$$1 + 1 = 2$$

$$2 + 2 = 4$$

$$4 + 3 = 7$$

$$7 + 4 = 11$$

$$11 + 5 = 16$$

$$16 + 6 = 22$$

$$22 + 7 = 29$$

$$29 + 8 = 37$$

Hence $37 + 9 = 46$ is the answer.

7. **Likewise above example we can place the series having differences in decreasing order:**

35, 27, 20, 14, 9, 5 — .

Sol. We can observe the series as under

$$35 - 8 = 27$$

$$27 - 7 = 20$$

$$20 - 6 = 14$$

$$14 - 5 = 9$$

$$9 - 4 = 5$$

Hence $5 - 3 = 2$ is the answer.

8. We can give a complex problem series such as :

2, 4, 5, 15, 17, 68, 71, 355, 359 — .

Sol. This series can be observed as under :

$$2 \times 2 = 4 + 1 = 5$$

$$5 \times 3 = 15 + 2 = 17$$

$$17 \times 4 = 68 + 3 = 71$$

$$71 \times 5 = 355 + 4 = 359$$

Hence $359 \times 6 = 2154$ is the answer.

9. 1, 2, 6, 24, 120 —

Sol. This series can be observed as under :

$$1 \times 1 = 1$$

$$1 \times 2 = 2$$

$$2 \times 3 = 6$$

$$6 \times 4 = 24$$

$$24 \times 5 = 120$$

Hence $120 \times 6 = 720$ is the answer.

10. Here we give another complex problem series :

Sol. 4, 16, 80, 240, 1440, 2880 —.

This can be observed as under :

$$4 \times 4 = 16 \times 5 = 80$$

$$80 \times 3 = 240 \times 6 = 1440$$

$$1440 \times 2 = 2880 \times 7 = 20160$$

Hence 20160 in the answer

11. There are some problems having the number being square of the predecessor number like 2, 4, 16, 256 —

Sol. In this series $2 \times 2 = 4$

$$4 \times 4 = 16$$

$$16 \times 16 = 256$$

Hence $256 \times 256 = 65536$ is the answer.

12. There may be some series having square of some number in decreasing or increasing order like 1, 4, 9, 16, 25, 36, 49 — .

Sol. In this series we can observe as below :

$$1^2 = 1$$

$$2^2 = 4$$

$$3^2 = 9$$

$$4^2 = 16$$

$$5^2 = 25$$

$$6^2 = 36$$

$$7^2 = 49$$

hence $8 = 64$ is the answer.

13. There may be some series having cubes of some numbers according to some rules like 8, 27, 64, 125 –

Sol. In this series we can observe as under

$$2 \times 2 \times 2 = 8$$

$$3 \times 3 \times 3 = 27$$

$$5 \times 5 \times 5 = 125$$

Hence $6 \times 6 \times 6 = 216$ is the answer.

14. There may be some series having mixed problems with square & cubes like : 4, 8, 9, 27, 16, 64 — .

Sol. In this series we can observe as under :

$$2 \times 2 = 4, 2 \times 2 \times 2 = 8$$

$$2 \times 2 = 4, 2 \times 2 \times 2 = 8$$

$$3 \times 3 = 9, 3 \times 3 \times 3 = 27$$

$$4 \times 4 = 16, 4 \times 4 \times 4 = 64$$

Hence $5 \times 5 = 25$ is the answer to fill the blanks.

15. There may be some complex problems having square, cube, plus & minus according to some rules : 4 5 8, 7, 9, 10, 27, 26, 16, 17, 64, 63, 25 — .

Sol. We can observe the above series as under .

Square Plus – 1

$$2^2 = 4 + 1 = 5,$$

$$3^2 = 9 + 1 = 10,$$

$$4^2 = 16 + 1 = 17,$$

$$5^2 = 25$$

Cube minus – 1

$$2^3 = 8 - 1 = 7$$

$$3 = 27 - 1 = 26$$

$$4^3 = 64 - 1 = 63$$

Hence $25 + 1 = 26$ is the answer.

Under this head following types of questions are asked :

1. Number-Series
2. Alphabet-Series
3. Letter-Series

(1) **Number-Series**—In this type a number-series is given in which either next term is asked or some wrong term which does not follow the series, is to find out.

Under this head following types of series are given—

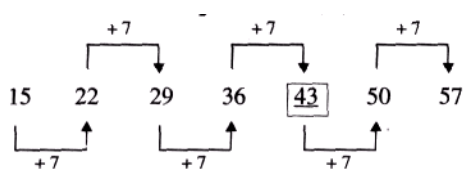
Arithmetic progression (A. P.)—In this type of series the difference of two consecutive terms is same. Sometimes series are so given that the difference of two terms is same.

16. In the following series, find the term in place of question-mark.

15, 22, 29, 36, ?, 50, 57

(A) 43 (B) 42 (C) 40 (D) 44

Sol. (A)

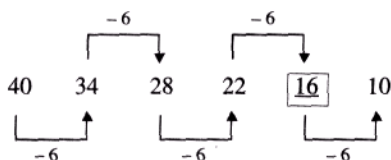


17. In the following series find the number in place of question mark ?

40, 34, 28, 22, 10

(A) 14 (B) 15 (C) 16 (D) 17

Sol. (C)

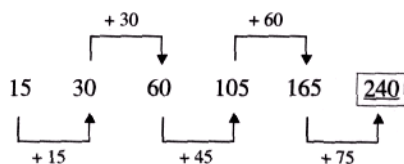


18. In the following series find the! term in place of question mark ?

15, 30, 60, 105, 165, ?

(A) 210 (B) 220 (C) 230 (D) 240

Sol. (D)



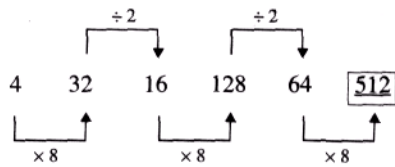
Geometrical Progression (G. P.)—In this type of series the ratio of two consecutive terms is same.

19. In the following series which number will replace the question mark ?

4, 32, 16, 128, 64, ?

(A) 612 (B) 512 (C) 362 (D) 412

Sol. (B):



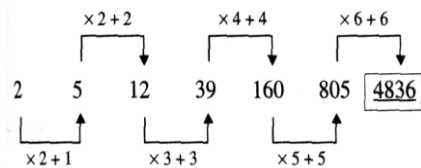
Mixed Series—In this type of series, both types of series A. P and G. P. are together.

20. In the following series, which number will replace the question mark ?

2, 5, 12, 39, 160, 805, ?

- (A) 4936 (B) 4930 (C) 4830 (D) 4836

Sol. (D)



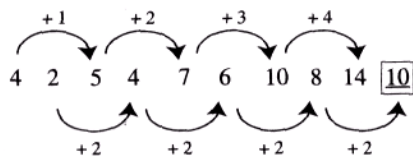
Compound Series—In this type of series, it is a mixture of two or more than two series.

21. In the following series, which number will replace the question mark ?

4, 2, 5, 4, 7, 6, 10, 8, 14, ?

- (A) 10 (B) 12 (C) 18 (D) 19

Sol. (A)



Series of Prime Numbers — In this type of series, the difference of two consecutive numbers is a prime number, or each term contains a prime number.

22. In the following series, which number will replace the question mark ?

23, 29, 31, 37, 41, 43, ?

- (A) 45 (B) 53 (C) 47 (D) 49

Sol. (C) On looking the series we see that each number of the series is a prime number and each subsequent term is the next prime number. Hence, in place of question mark the next prime number to 43 will come. But the next prime number to 43 is 47. Hence, 47 will replace the question mark.

Series based on squares and cubes—In this type of series the difference between two consecutive numbers will always be in the form of a square or a cube or the terms will be in the form of square or cube.

23. Which number will replace the question mark in the following series ?

1, 4, 9, 16, 25, 36, ?

- (A) 40 (B) 45 (C) 49 (D) 47

Sol. (C)

1,	4,	9,	16,	25,	36,	49
↓	↓	↓	↓	↓	↓	↓
1^2	2^2	3^2	4^2	5^2	6^2	7^2

24. In the following series which number will replace the question mark ?

0, 6, 24, 60, 120, 210, ?

- (A) 336 (B) 343 (C) 300 (D) 332

Sol. (A)

0,	6,	24,	60,	120,	210,	336
↓	↓	↓	↓	↓	↓	↓
1^3-1	2^3-2	3^3-3	4^3-4	5^3-5	6^3-6	7^3-7

(2) **Alphabet Series**—In this type of test, a letter series or a number letter series is given. A candidate has to find out the missing series.

25. DKM, FJP, HIS, JHV?

- (A) HGY (B) IGZ (C) IGY (D) LGY

Sol. (D):

D	$\xrightarrow{+2}$	F	$\xrightarrow{+2}$	H	$\xrightarrow{+2}$	J	$\xrightarrow{+2}$	L G Y
K	$\xrightarrow{-1}$	J	$\xrightarrow{-1}$	I	$\xrightarrow{-1}$	H	$\xrightarrow{-1}$	
M	$\xrightarrow{+3}$	P	$\xrightarrow{+3}$	S	$\xrightarrow{+3}$	V	$\xrightarrow{+3}$	

Hence the correct answer is (D).

26. Q1F, S2E, U6D, W21C?

- (A) Y66B (B) Y88B (C) Z88B (D) Y44B

Sol. (B)

Q	$\xrightarrow{+2}$	S	$\xrightarrow{+2}$	U	$\xrightarrow{+2}$	W	$\xrightarrow{+2}$	Y 88 B
1	$\xrightarrow{\times 1+1}$	2	$\xrightarrow{\times 2+2}$	6	$\xrightarrow{\times 3+3}$	21	$\xrightarrow{\times 4+4}$	
F	$\xrightarrow{-1}$	E	$\xrightarrow{-1}$	D	$\xrightarrow{-1}$	C	$\xrightarrow{-1}$	

Hence the correct answer is (B).

27. **AYD, BVF, DRH, ?, KGL**

- (A) **FMI** (B) **GMJ** (C) **HLK** (D) **GLJ**

Sol. (B)

$$\begin{array}{ccccccc}
 \text{A} & \xrightarrow{+1} & \text{B} & \xrightarrow{+2} & \text{D} & \xrightarrow{+3} & \boxed{\text{G}} & \xrightarrow{+4} & \text{K} \\
 \bullet & & \bullet & & \bullet & & \bullet & & \bullet \\
 \text{Y} & \xrightarrow{-3} & \text{V} & \xrightarrow{-4} & \text{R} & \xrightarrow{-5} & \text{M} & \xrightarrow{-6} & \text{G} \\
 \text{D} & \xrightarrow{+2} & \text{F} & \xrightarrow{+2} & \text{H} & \xrightarrow{+2} & \boxed{\text{J}} & \xrightarrow{+2} & \text{L}
 \end{array}$$

Hence the correct alternative is (B).

28. **LPQ, NOS, PNU, RMW, ?**

- (A) **TYL** (B) **TMY** (C) **YTL** (D) **TLY**

Sol. (D):

$$\begin{array}{ccccccc}
 \text{L} & \xrightarrow{+2} & \text{N} & \xrightarrow{+2} & \text{P} & \xrightarrow{+2} & \text{R} & \xrightarrow{+2} & \boxed{\text{T}} \\
 \text{P} & \xrightarrow{-1} & \text{O} & \xrightarrow{-1} & \text{N} & \xrightarrow{-1} & \text{M} & \xrightarrow{-1} & \boxed{\text{L}} \\
 \text{Q} & \xrightarrow{+2} & \text{S} & \xrightarrow{+2} & \text{U} & \xrightarrow{+2} & \text{W} & \xrightarrow{+2} & \boxed{\text{Y}}
 \end{array}$$

Hence the correct alternative is (D).

29. **3F, 6G, 11I, 18L, ?**

- (A) **21O** (B) **25N** (C) **27Q** (D) **27P**

Sol. (D)

$$\begin{array}{ccccccc}
 3 & \xrightarrow{+3} & 6 & \xrightarrow{+5} & 11 & \xrightarrow{+7} & 18 & \xrightarrow{+9} & \boxed{27} \\
 \text{F} & \xrightarrow{+1} & \text{G} & \xrightarrow{+2} & \text{I} & \xrightarrow{+3} & \text{L} & \xrightarrow{+4} & \boxed{\text{P}}
 \end{array}$$

Hence the correct alternative is (D).

30. **MN, LO, KP, JQ, IR, ?**

- (A) **GH** (B) **TU** (C) **HS** (D) **JV**

Sol. (C)

$$\begin{array}{ccccccc}
 \text{M} & \xrightarrow{-1} & \text{L} & \xrightarrow{-1} & \text{K} & \xrightarrow{-1} & \text{J} & \xrightarrow{-1} & \text{I} & \xrightarrow{-1} & \boxed{\text{H}} \\
 \text{N} & \xrightarrow{+1} & \text{O} & \xrightarrow{+1} & \text{P} & \xrightarrow{+1} & \text{Q} & \xrightarrow{+1} & \text{R} & \xrightarrow{+1} & \boxed{\text{S}}
 \end{array}$$

Hence the correct alternative is (C)

31. **CFL, EIK, GLJ, 10I, ?**

- (A) **KRH** (B) **KRJ** (C) **JRH** (D) **KQH**

Sol. (A)

$$\begin{array}{ccccccc}
 C \xrightarrow{+2} & E \xrightarrow{+2} & G \xrightarrow{+2} & I \xrightarrow{+2} & \boxed{K} \\
 F \xrightarrow{+3} & I \xrightarrow{+3} & L \xrightarrow{+3} & O \xrightarrow{+3} & R \\
 L \xrightarrow{-1} & K \xrightarrow{-1} & J \xrightarrow{-1} & I \xrightarrow{-1} & \boxed{H}
 \end{array}$$

Hence the correct alternative is (A).

32. BY, IQ, NK, OJ, ?

(A) RF (B) TF (C) RE (D) SE

Sol. (C)

$$\begin{array}{ccccccc}
 B \xrightarrow{+7} & I \xrightarrow{+5} & N \xrightarrow{+3} & Q \xrightarrow{+1} & \boxed{R} \\
 Y \xrightarrow{-8} & Q \xrightarrow{-6} & K \xrightarrow{-4} & G \xrightarrow{-2} & \boxed{E}
 \end{array}$$

33. BCDB, CDDEC, DEEEFD, ?

(A) EFFFGE (B) EFFFFGF (C) EFFFFGE (D) FEEFGF

Sol. (C)

$$\begin{array}{ccccccc}
 B \xrightarrow{+1} & C \xrightarrow{+1} & D \xrightarrow{+1} & \boxed{E} \\
 C \longrightarrow & DD \longrightarrow & EEE \longrightarrow & \boxed{FFFF} \\
 D \xrightarrow{+1} & E \xrightarrow{+1} & F \xrightarrow{+1} & G \\
 B \xrightarrow{+1} & C \xrightarrow{+1} & D \xrightarrow{+1} & \boxed{E}
 \end{array}$$

Hence the correct alternative is (C).

34. BF, CH, ?, HO, LT.

(A) EM (B) EK (C) FJ (D) EL

Sol. (B)

$$\begin{array}{ccccccc}
 B \xrightarrow{+1} & C \xrightarrow{+2} & \boxed{E} \xrightarrow{+3} & H \xrightarrow{+4} & L \\
 F \xrightarrow{+2} & H \xrightarrow{+3} & \boxed{K} \xrightarrow{+4} & O \xrightarrow{+5} & T
 \end{array}$$

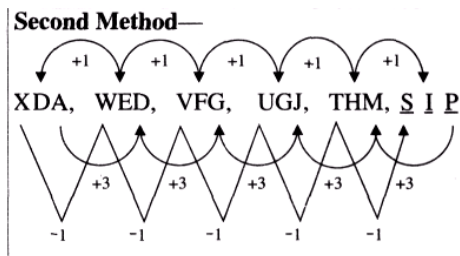
Hence the correct alternative is (B).

35. XDA, WED, VFG, UGJ, THM?

(A) JRQ (B) QKN (C) PLO (D) SIP

Sol. (D)

$$\begin{array}{ccccccc}
 X \xrightarrow{-1} & W \xrightarrow{-1} & V \xrightarrow{-1} & U \xrightarrow{-1} & T \xrightarrow{-1} & \boxed{S} \\
 D \xrightarrow{+1} & E \xrightarrow{+1} & F \xrightarrow{+1} & G \xrightarrow{+1} & H \xrightarrow{+1} & I \\
 A \xrightarrow{+3} & D \xrightarrow{+3} & G \xrightarrow{+3} & J \xrightarrow{+3} & M \xrightarrow{+3} & P
 \end{array}$$



Hence the correct alternative is (D).

- (3) **Letter-Series**—In this type of questions, a letter-series is given from which some of the letters are missing. The missing letters are given their proper sequence in one of the alternative answers. The candidate has to find out the correct alternative.

36. **Letters of which of the alternative answers when placed at the blank places one after another will complete the given letter-series ?**

a — b b c — a a b — c c a — b b c c

- (A) a c b a (B) b a c b (C) c a b a (D) a b b a

Sol. (A)

By placing the letters of alternative (A) at the blank places one after another in the given letter-series, we get
 a a b b c c a a b b c c a a b b c c

Thus, we get that a a b b c c is repeated three times. Hence series is formed therefore, the correct alternative is (A).

37. **In the following letter-series some letters are missing. The missing letters are given in the proper sequence as one of the alternatives. Find the correct alternative.**

a b — a b c a b — a b c — b c a — c

- (A) a b a c (B) b c a c (C) c c a b (D) b b a c

Sol. (C)

By placing the letters of the alternative (C) at the blank places one after another in the given letter-series, we get

a b c a b c a b c a b c a b c a b c

Thus, abc is repeated 6 times. Hence the series is formed, therefore the correct alternative is (C).

38. **In the following letter-series some letters are missing. The missing letters are given in the proper sequence as one of the alternatives. Find the correct alternative.**

a b a — c — c b c a a b — b c b — b c a

- (A) b c a b (B) b b a c (C) b b c a (D) c a b c

Sol. (B)

By placing the letters of the alternative (B) at the blank space one after another in the given series, we get,
 a b a b c b c b c a a b a b c b c b c a

Thus, a b a b c l b c b c a l a b a b c l b c b c a l series is formed. Therefore, the correct alternative is (B)

Assignment

Find the missing numbers in the following series :

1. 5, 4, 7, 5, 9, 6 — 13, 7, 15, 8
 (A) 9 (B) 8 (C) 11 (D) 12
2. 4, 11, 18, 25, —, 39, 46
 (A) 30 (B) 32 (C) 31 (D) 68
3. 9, 18, 27, 36, —, 54, 63
 (A) 46 (B) 44 (C) 47 (D) 45
4. 2, 9, 4, 7, 6, 5, 8, —, 10, 1
 (A) 3 (B) 4 (C) 9 (D) 11
5. 4, 8, 12, 16, 20, —, 28, 32
 (A) 23 (B) 26 (C) 24 (D) 25
6. 1, 8, 7, 14, 13, 20, —, 26
 (A) 21 (B) 18 (C) 22 (D) 19
7. 1, 4, 9, 16, 25, —, 49
 (A) 26 (B) 36 (C) 28 (D) 30
8. 1, 9, 3, 7, 5, 5, 7, 3, 9, —, 11
 (A) 1 (B) 10 (C) 4 (D) 5
9. 1, 3, 6, 10, 15, —, 28, 36
 (A) 20 (B) 16 (C) 21 (D) 22
10. 2, 4, 3, 9, 4, 16, —, 25
 (A) 8 (B) 6 (C) 20 (D) 5
11. 81, 64, 49, 36, —, 16
 (A) 25 (B) 39 (C) 24 (D) 18
12. 2, 9, 28, 65, —, 217
 (A) 88 (B) 127 (C) 98 (D) 126

13. 3, 6, 11, 18, —, 38, 51
 (A) 26 (B) 28 (C) 27 (D) 40
14. 0, 3, 8, 15, —, 35
 (A) 24 (B) 25 (C) 26 (D) 20
15. 1, 8, 27, 64, —, 216
 (A) 127 (B) 125 (C) 124 (D) 128
16. 1, 3, 6, 10, 15, —, 28, 36
 (A) 24 (B) 22 (C) 64 (D) 21
17. 729, 512, 343, —, 125, 64
 (A) 216 (B) 220 (C) 330 (D) 128
18. 100, 81, 64, —, 36, 25
 (A) 72 (B) 52 (C) 49 (D) 50

Directions: In each of the following questions there is a series of letters. One of the term is missing. Find out the missing term.

19. p r t, ..., b d f, h j l, n p r.
 (A) u w y (B) v x z (C) x z b (D) u x w
20. AC, FH, KM, PR, ...
 (A) S U (B) T V (C) U W (D) W V
21. G T Z, F S Y, E R X, D Q W, ...
 (A) C V P (B) C P V (C) V C P (D) V P C

Directions—Find the missing term in which of the following letters series.

22. c e d, i h g, l k m, ..., u t s
 (A) n p o (B) o r q (C) o q p (D) q r o
23. prt, ..., bdf, hjl, npr
 (A) vya (B) xzb (C) vxz (D) uyb

24. Which set of letters can be placed at the sign (?) of interrogation ?
 B E H, I L O, A D G, ?
 (A) L O I (B) N Q T (C) Z M Y (D) C P R

25. In the following letter series which of the groups of letters will replace the question mark?
 B F, C H, ?, H O, L T
 (A) E K (B) D N (C) F J (D) E L

Directions: In questions 36 to 37, select the alternative which will complete the series.

26. h g f, k j i, n...
 (A) l p (B) o q (C) p r (D) m l

27. Which one letter-pair will complete the series ?
 Series : A Z, C X, E V, ?
 (A) G S (B) G T (C) H T (D) H U

Directions-Which one of the letters given below each question from 38 to 40, will come in blank space ?

28. X, U, R, O, L,...
 (A) M (B) J (C) K (D) I

29. B A, Y Z, D C, W X,...
 (A) D E (B) E F (C) F E (D) F G

30. What will be the next term in ?
 D C X W, F E V U, H G, T S, ...
 (A) L K P O (B) A B Y Z (C) J I R Q (D) L M R S

Directions- In each of the questions from 41 to 43, which terms will be in the blank space ?

31. A/2, B/4, C/6, D/8,...
 (A) E/16, F/32 (B) F/32, 1/14 (C) F/12, E/16 (D) E/10, F/12

32. C - 3, E - 5, G - 7, 1 - 9, ...
 (A) X - 24, M - 21 (B) K - 11, M - 13 (C) O - 15, X - 24 (D) M - 18, K - 14

33. Which one of the answer would be in place of question mark in the following series ?

A, CD, GHI,?, UVWXY

- (A) LMNO (B) MNO (C) NOPQ (D) NOP

Directions—In each of the questions from 44 to 48, a letter series is given from which some of the letters are missing. The missing letters are given in their proper sequence in one of the alternative answers. Find out the correct answer in each question.

34. a b a – a b – b – b a –

- (A) a a a b (B) b a b a (C) b a a b (D) a b b b

35. a b – a – b – a – b b a

- (A) a a a b (B) b a b a (C) a b b a (D) b a a b

36. – b c – c a – a b a – c – c a

- (A) a b b c c (B) b a c b a (C) b b b c c (D) a b c b b

37. a – b b – b a a – b b b – a a

- (A) b a a b b (B) b b a a b (C) a b a a b (D) a a b b a

38. a – c b – b c – c a – a b – b

- (A) a b c c a (B) b c a c a (C) b c b b a (D) c a b b e

Directions—(Q. 49–50) In each of the following letter sequences some letters are missing which are given in that order as one of the four alternatives under it. Find the correct alternatives in each case and mark your answer on the answer–sheet as instructed.

39. b a a b – a b a – b a b a –

- (A) b b a a (B) a a a a (C) a b a b (D) b a b a

40. – b b a – b a – b a a –

- (A) a b b a (B) a a b b (C) b b a a (D) a b a b

Answer Key

1.	(C)	2.	(B)	3.	(D)	4.	(A)	5.	(C)
6.	(D)	7.	(B)	8.	(A)	9.	(C)	10.	(D)
11.	(A)	12.	(D)	13.	(C)	14.	(A)	15.	(B)
16.	(D)	17.	(A)	18.	(C)	19.		20.	
21.		22.		23.		24.		25.	
26.		27.		28.		29.	(B)	30.	(C)
31.	(B)	32.	(C)	33.	(C)	34.	(B)	35.	(A)
36.	(D)	37.	(B)	38.	(D)	39.	(C)	40.	(C)
41.	(D)	42.	(C)	43.	(A)	44.	(C)	45.	(B)
46.	(D)	47.	(C)	48.	(B)	49.	(D)	50.	(B)