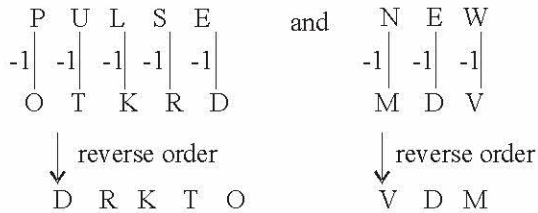


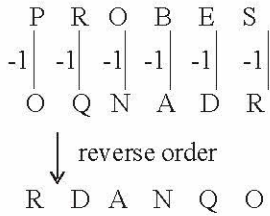
Ch 3 CODING-DECODING

ANSWERS AND EXPLANATIONS

1. (a) As,



Similarly,



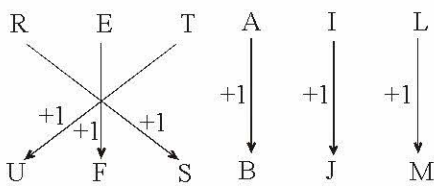
Hence, required code : RDANQO



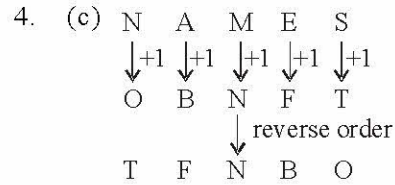
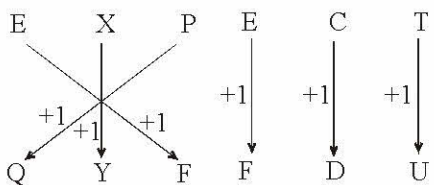
Hence,



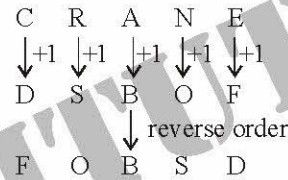
3. (d) As,



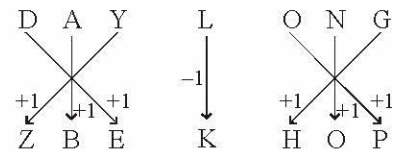
Similarly,



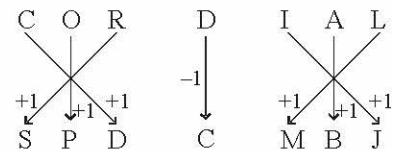
Similarly,



5. (a) As,



Similarly,



6. (c) CIG → GIC , ARE → ERA, TTE → ETT

⇒ DIR ECT ION → RIDTCENOI

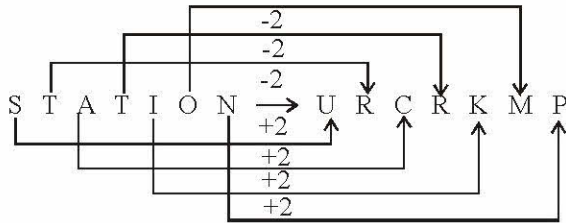
7. (b) Each letter of the word is moved four steps forward to obtain the code.

8. (b) Each letter of the word is moved three steps forward to obtain the code.

9. (a) The first, second, third, fourth, fifth and sixth letters of the word are respectively moved two, three, four, five, six and seven steps forward to obtain the corresponding letters of the code.



10. (d) As



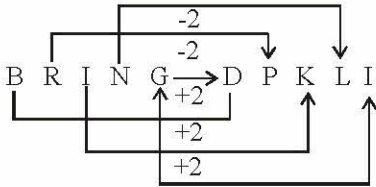
L F S C B O

Thus the code for BANKAR is LFSCBO. Similarly, the code of CONFER can be obtained as follows:

C O N F E R

F E R C O N

Similarly



G F S D P O ← Coded word

- 11. (b) Each letter of the word is moved four steps forward to obtain the code.
- 12. (a) The first six letters and then the last six letters are written in a reverse order to obtain the code.
- 13. (a) If in the word, a letter is nth letter from the beginning of the English alphabet, then in the code the corresponding letter is the (n + 1)th letter from the end of the alphabet.
- 14. (d) As,

P	E	R	I	N	A	T	H
↓+1	↓+1	↓-1	↓-1	↓+1	↓+1	↓-1	↓-1
Q	F	Q	H	O	B	S	G

Similarly,

S	Y	N	D	R	O	M	E
↓+1	↓+1	↓-1	↓-1	↓+1	↓+1	↓-1	↓-1
T	Z	M	C	S	P	L	D

- 15. (a) Here, the coding has been done in two steps. In the first step, the letters of the words are split into two groups having equal number of letters, i.e.

B A N K E R

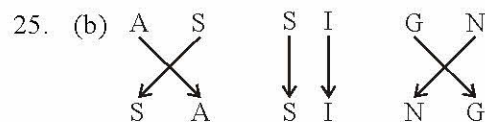
After that the position of the groups are interchanged. i.e.

K E R B A N

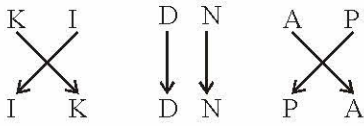
And in the second step, each letter is moved one step forward.

K E R B A N

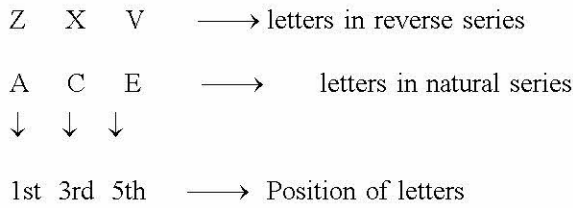
- 16. (a) The letters of the word are written in a reverse order and each letter, except the first and the last one, is moved one step forward, to obtain the code.
- 17. (b) First, third and fifth letters are moved one step forward and second, fourth and sixth letters are moved one step backward to obtain the corresponding letters of the code.
- 18. (b) The first, second, third letters of the word are respectively moved one, two, three,.....steps backward to obtain the corresponding letters of the code.
- 19. (a) The letters of the word are written in a reverse order and then the third and fourth letters from the beginning and the end of the word so formed are reversed in order, to obtain the code. Thus, the code for POPULARISE is ESRIALPUOP.
- 20. (d) The odd-number positioned letters move two letters backward and the even number positioned ones move three letters forward. Thus PROJECT will become NUMMCFR.
- 21. (c) The first four letters are first written in reverse order. This is followed by the last four letters, also in reverse order.
- 22. (d) Odd-positioned letters are coded as two positions forward and even-positioned letters are coded as three positions forward.
- 23. (d) odd-placed letters are coded as two places forward and even-placed letters are coded as four places forward.
- 24. (b) Each letter of the word is moved five steps forward to obtain the code.



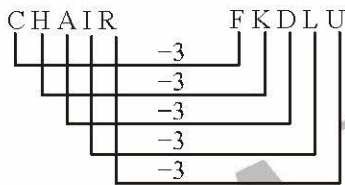
Similarly,



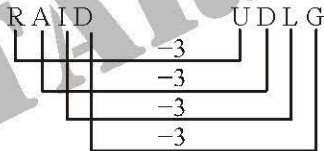
26. (d) The letters of the word ACE are deciphered by decoding ZXV. The letters are decoded by substituting their represented letters in the natural order, (i.e., 'Z' 1st in the reverse series and 'A' 1st in natural series)



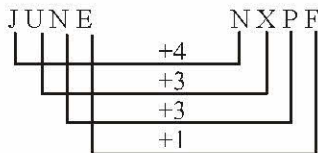
27. (d) The word is coded by moving the letters three steps forward



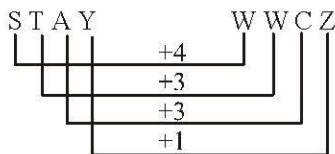
Similarly,



28. (a) The word is coded by moving the letters +4, +3, +2, and +1 steps respectively.

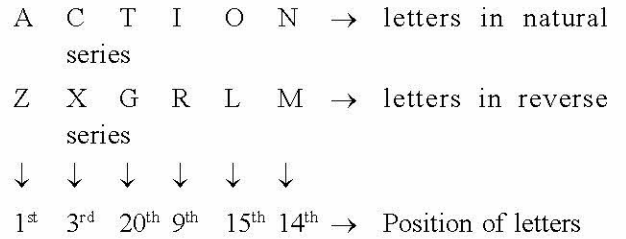


Similarly,

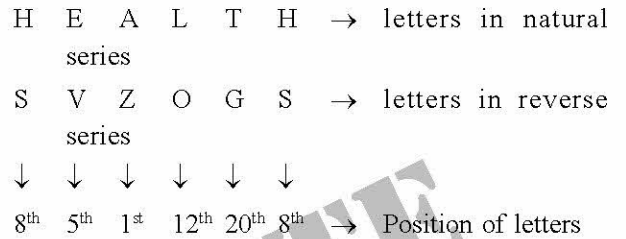


29. (a) The letters of the word are coded by their

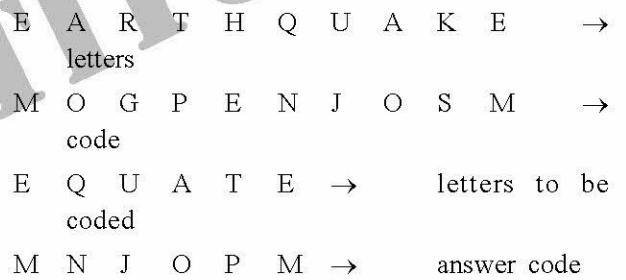
represented letters in the reverse series.



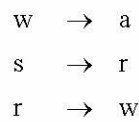
Similarly,



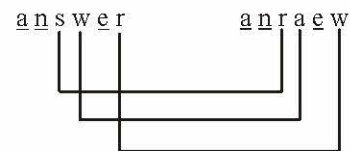
30. (d) The alphabets in word EQUATE are taken from the given word EARTHQUAKE Tally the letters from the coded word to get the answer code.



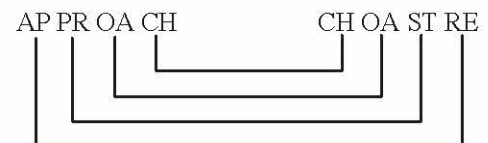
31. (b) Alphabets whose codes are given



All other alphabets will remain unchanged, so, 'answer' will be coded as :

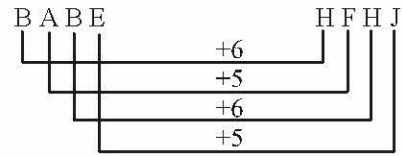
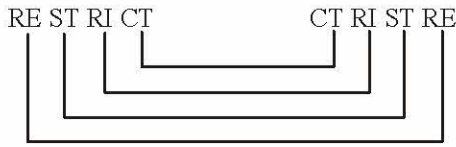


32. (c) The word is divided into sections containing two letters each, then the sections are written backwards.

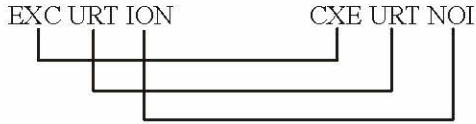


Similarly,

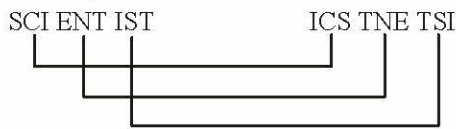




33. (c) The word is divided into three equal sections, and the letters of first and third sections are written backwards.



Similarly,



34. (a) The letters of the coded word are decoded the represent letters in the reverse series.

U Z W V → (letters in natural series)
 F A D E → (letters in reverse series)
 ↓ ↓ ↓ ↓
 21st 26th 23rd 22nd → (position of letters)

Similarly,

I F G H → (letters in natural series)
 R U S T → (letters in reverse series)
 ↓ ↓ ↓ ↓
 9th 6th 7th 8th → (position of letters)

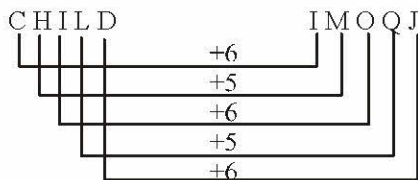
35. (d) The letters of the word are coded by represented letters. To find the answer code, select the coded represented letters.

HORSE CAT → letters
 BUNGY HOW → substituted letter codes

So,

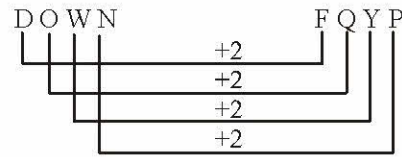
CHEST → letters
 HBYGW → substituted answer letter codes

36. (a) The letters of word are moved six and five steps forward alternately.

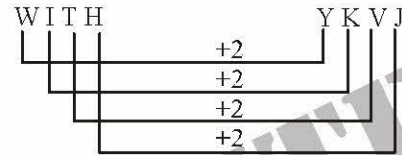


Similarly,

37. (c) The letters of the word are moved to steps forward.



Similarly,



38. (b) The alphabets are coded as shown:

R O S E C H A I P
 6 8 2 1 7 3 4 5 9

So, in SEARCH, S is coded as 2, E as 1, A as 4, R as 6, C as 7, H as 3. Thus, the code for SEARCH is 214673.

39. (b) Let A = 1, B = 2, C = 3, ..., X = 24, Y = 25, Z = 26.

Then, M = 13 = 1 + 3 = 4; O = 15 = 1 + 5 = 6

L = 12 = 1 + 2 = 3; T = 20 = 2 + 0 = 2;

Y = 25 = 2 + 5 = 7.

So, MOBILITY = 46293927.

Similarly, EXAMINATION = 56149512965

40. (c) 15789 ≡ XTCAL

& 2346 ≡ NPSU

⇒ 2 → N, 3 → P, 5 → T, 4 → S and 9 → L

Hence, 23549 will be coded as NPTSL.

41. (a) The alphabets are coded as shown :

E N G L A D F R C
 1 2 3 4 5 6 7 8 9

So, G is coded as 3, R as 8, E as 1 and C as 9.

Thus, GREECE is coded as 381191.

42. (c) The alphabets are coded as follows:



D E L H I C A U T
7 3 5 4 1 8 2 9 6

So, in CALICUT, C is coded as 8, A as 2, L as 5, I as 1, U as 9 and T as 6. Thus, the code for CALICUT is 8251896.

43. (c) Code for the given word = (Number of letters in the word) - 1.

So, code for GOVERNMENT = 10 - 1 = 9.

44. (c) Difference between alphabetical positions of N and O = 1 = difference between 2 and 3

Difference between alphabetical positions of O and R = 3 = Diff. between 3 and 6.

Similarly, for REST,

difference between R and E = 13,

difference between E and S = 14

and difference between S and T = 1

Here, only option (c) follows above condition

45. (c) The alphabets are coded as follows :

C L O K T I M E
3 4 2 5 8 6 7 9

So, the code for MOLEK is 7 2 4 9 5.

46. (d) Z = 52 = 26 × 2

ACT = 1 × 2 + 3 × 2 + 20 × 2 = 48

[Alphabetical position numbers has been doubled]

⇒ BAT = 2 × 2 + 1 × 2 + 20 × 2 = 46

47. (c) Here, 2 → A, 3 → L, 5 → G, 4 → U and 9 → T.

Hence, 23549 will be having the code ALGUT.

48. (a)

0	V	E	R	and	V	I	S	T
↓	↓	↓	↓		↓	↓	↓	↓
\$	#	%	*		#	+	X	-

S O R E

↓ ↓ ↓ ↓

X \$ * %

49. (a) The number represent letters and to find the answer, select the respective letters.

341782 0592 → letters

MONKEY RAGS → code

So,

7 5 1 9 5 0 4 4 → code

KANGAROO → answer letters

50. (c) The manner of coding is

TODAY WROTE DATE DIRTH

45738 10542 7342 79046

The number '5' is common in words TODAY and WROTE, and so is the letter 'O'. Letter 'T' cannot be the answer because it is common in all the four words and so is its number code '4'.

51. (a) Position of D alphabetically = 4

Position of F alphabetically = 6

Thus D + F = 10 = position of J in alphabet.

52. (b) 'Kit Mit Fit' means 'I Am Laborious' ... (i)

'Zit Rit Kit' means 'Laborious Is Dangerous' ... (ii)

and

'Sit Fis Rit' means 'Dangerous Extremely painful' (iii)

From (i) and (ii), 'Kit' means 'Laborious' and from (ii) and (iii), 'Rit' means 'Dangerous'

∴ From (ii) it is clear that for 'Is' the code is 'Zit'.

53. (d) 'ni tim si' means 'How are you' (i)

'ble ni si' means 'where are you' (ii)

From (i) and (ii), 'ni si' means 'are you'

∴ ble → where

54. (c) In the first and second statements, the common code word is 'gnr' and the common word is 'Olympic'. So, 'gnr' means 'Olympic'.

In the second and third statements, the common word is 'Games' and common code word is 'hyto'.

So, 'hyto' means 'Games'. Thus, in the second statement, 'emf' means 'Summer'.

55. (c) In the first and second statements, the common code digit is '2' and the common word is 'carpet'. So '2' means 'carpet'.

In the second and third statements, the common code digit is '6' and the common word is 'one'. So, '6' means 'one'.

Therefore in second statement, '5' means 'dust'.

56. (c) '289' means 'Read from newspaper'

..... (i)

'276' means 'tea from field'

..... (ii)



On comparing (i) and (ii), 2 is used for, 'from'

∴ From (ii) for tea the number is either 6 or 7.

57. (c) In the second and third statements, the common code is '9a' and the common word is 'not'. So, '9a' means 'not'. In the first and second statements, the common codes are '7c' and '3a' and the common words are 'is' and 'Eternal'. So, in the second statement, '8b' means 'Enmity'.
58. (a) In the first and second statements, the common code word is 'tingo' and the common word is 'flower'. So, 'tingo' stands for 'flower'. In the second and third statements, the common code word is 'mst' and the common word is 'sweet'. So 'mst' stands for 'sweet'. Thus, in the second statement, 'rho' stands for 'fragrance'.
59. (c) In the first and second statements, the common code words are 'cinto' and 'tsi' and the common words are 'her' and 'is'. So, 'cinto' and 'tsi' are the codes for 'her' and 'is'. In the second and third statements, the common code words are 'cinto', 'tsi' and 'oind' and the common words are 'her', 'is' and 'literature'. Now, 'cinto' and 'tsi' are codes for 'her' and 'is'. So, 'oind' stands for 'literature'.
60. (b) $1 \quad 2 \quad \textcircled{3} \rightarrow \textcircled{\text{hot}} \quad \text{filtered} \quad \text{coffee}$
 $\textcircled{3} \quad \boxed{5} \quad 6 \rightarrow \text{very} \quad \textcircled{\text{hot}} \quad \boxed{\text{day}}$
 $\boxed{5} \quad 8 \quad 9 \rightarrow \boxed{\text{day}} \quad \text{and} \quad \text{night}$
 Clearly, '6' stands for 'very'.
61. (a) RBM STD BRO PUS \equiv the cat is beautiful
 (i)
 TNH PUS DIM STD \equiv the dog is brown
 (ii)
 PUS DIM BRO PUS CUS \equiv the dog has the cat
 (iii)
 (i) and (ii) \Rightarrow STD PUS \equiv is
 (ii) and (iii) \Rightarrow PUS DIM \equiv the dog
 (i) and (iii) \Rightarrow PUS BRO \equiv the cat
 ∴ From (iii), CUS \equiv has

62. (a) PIC VIC $\textcircled{\text{NIC}} \rightarrow$ winter $\textcircled{\text{is}}$ cold
 TO $\textcircled{\text{NIC}} \quad \boxed{\text{RE}} \rightarrow$ summer $\textcircled{\text{is}}$ $\boxed{\text{hot}}$
 $\boxed{\text{RE}} \quad \text{THO} \quad \text{PA} \rightarrow$ nights are $\boxed{\text{hot}}$

Clearly, 'TO' stands for 'summer'.

63. (b)
- | Code | Sentence |
|-----------------|---------------|
| 1. gri chri | brand new |
| 2. gyp twoh | very old |
| 3. gri bur twoh | old and new |
| 4. chri deh gyp | old brand car |

The word 'new' is present in 1st and 3rd sentences so is the code in 1st and 3rd sentences and so is the code 'gri'. The word 'car' is only in the 4th sentence and code 'deh' is repeated in any other sentence.

64. (d)

ine ri so
 si ne po

good rainy day
 day is wonderful

ne is common

day is common

\Rightarrow ne means day

Again ; $\begin{array}{c} \boxed{\text{ri}} \text{ jo} \\ \text{ne} \boxed{\text{ri}} \text{ so} \end{array}$

$\begin{array}{c} \boxed{\text{good}} \text{ boy} \\ \boxed{\text{good}} \text{ rain day} \end{array}$

ri is common

good is common

\Rightarrow ri mean good.

Thus, so means rainy.

65. (c) In first two sentences, 'good' is common
 ∴ 'good' stands for 'dar'.
 In last two sentences, 'bad' is common.
 ∴ 'bad' stands for 'tok'.
 In first and last sentences, 'are' is common.
 ∴ 'are' stands for 'na'.
 Hence in last sentence, 'na' stands for 'are'
 'tok' stands for 'bad'.
 Thus, 'tim' stands for 'they'.

66. (a) The colour of clean sky is blue and blue means green. Hence, the colour of clean sky is green.



67. (c) The fruits grow on a 'tree' and 'tree' is called 'sky'. So the fruits grow on the 'sky'.

68. (e) We know, soap is used for washing clothes.

Here, soap is called ink.

∴ Ink is used in washing the clothes.

Hence (e) is the correct answer.

69. (d) In the code, night is called sunshine. As we sleep in night, the correct answer is sunshine.

EXERCISE 2

1. (a) 726395 = IMDNWI condition (i) is applied

2. (e) 263847 = MDNBKT

3. (d) 591248 = RWJMKB

4. (c) 615824 = YJRBMV condition (ii) is applied

5. (b) 831795 = BNJTWV

6. (b) $\begin{array}{cccccc} 2 & 7 & 0 & 5 & 1 & 4 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ \$ & \% & L & T & K & Q \end{array}$

condition (ii) is applied

7. (a)

$\begin{array}{cccccc} 3 & 6 & 4 & 2 & 7 & 9 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ \textcircled{C} & H & \$ & Q & \% & \textcircled{C} \end{array}$

condition (i) is applied

8. (c) $\begin{array}{cccccc} 8 & 7 & 5 & 3 & 0 & 6 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ H & \% & T & \# & L & J \end{array}$

condition (ii) is applied

9. (e) $\begin{array}{cccccc} 5 & 9 & 2 & 4 & 7 & 6 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ T & @ & Q & \$ & \% & H \end{array}$

10. (d) $\begin{array}{cccccc} 4 & 6 & 8 & 9 & 1 & 0 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ \$ & H & J & @ & K & \star \end{array}$

condition (iii) is applied

11. (c) $\begin{array}{cccccc} E & N & I & M & Y \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ 1 & 7 & 3 & 2 & 8 \end{array}$

12. (b) $\begin{array}{cccccc} G & E & N & I & R \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ 6 & \% & \square & 3 & 9 \end{array}$

condition (ii) is applied

13. (d) $\begin{array}{cccccc} Q & U & E & R & I \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ ? & 4 & 1 & 9 & ? \end{array}$

condition (iii) is applied

14. (d) $\begin{array}{cccccc} E & I & N & U & M \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ 1 & 3 & 7 & 4 & 2 \end{array}$

15. (a) $\begin{array}{cccccc} U & N & G & R & E \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ \$ & 7 & 6 & 9 & \$ \end{array}$

condition (i) is applied

16. (a) 2976581 → B @ \$ © P = B

17. (b) 7269534 → K B © @ P T \$

18. (c) 8135246 → © C T P B K ©

19. (e) 4352718 → = T P B \$ C =

20. (d) 9256473 → X B P © K \$ X

21. (c)

Letter	E	H	N	D	J	V
Code	#	4	2	3	9	8

Condition is applied.

22. (e)

Letter	K	Q	D	J	N	H
Code	7	6	3	9	2	4

23. (a)

Letter	A	J	N	V	Q	E
Code	#	9	2	8	6	#

Condition is applied.

24. (b)

Letter	Q	H	J	V	N	D
Code	6	4	9	8	2	3

25. (d)

Letter	J	K	E	D	H	A
Code	9	7	1	3	4	#

Condition is applied.

