# Ch 3 CODING-DECODING

# ANSWERS AND EXPLANATIONS

1. (a) As,

P U L S E and N E W
-1 -1 -1 -1 -1 -1 -1 -1
O T K R D M D V

reverse order: D R K T O and V D M

Similarly,

P R O B E S
-1 -1 -1 -1 -1 -1
O Q N A D R

reverse order: R D A N Q O

Hence, required code : RDANQO

2. (c)

| 1 | 2 | 3 | 4 | 5 | | 4 | 1 | 3 | 5 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|
| A | M | O | N | G | → | N | A | O | G | M |
| 1 | 2 | 3 | 4 | 5 | | 4 | 1 | 3 | 5 | 2 |
| S | P | I | N | E | → | N | S | I | E | P |

Hence,

| 1 | 2 | 3 | 4 | 5 | | 4 | 1 | 3 | 5 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|
| L | A | M | O | N | → | O | L | M | N | A |

3. (d) As,

R E T A I L
+1 +1 +1 +1 +1 +1
U F S B J M

Similarly,

E X P E C T
+1 +1 +1 +1 +1 +1
Q Y F F D U

4. (c) N A M E S
+1 +1 +1 +1 +1
O B N F T

reverse order: T F N B O

Similarly,

C R A N E
+1 +1 +1 +1 +1
D S B O F

reverse order: F O B S D

5. (a) As,

D A Y L O N G
+1 +1 +1 −1 +1 +1 +1
Z B E K H O P

Similarly,

C O R D I A L
+1 +1 +1 −1 +1 +1 +1
S P D C M B J

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

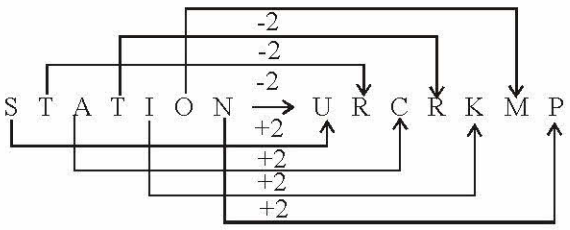
⇒ DIR ECT ION → RIDTCENOI

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

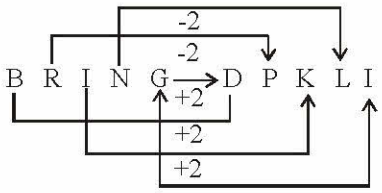
8. (b) Each letter of the word is moved three steps forward to obtain the code.

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




Similarly




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 |
|---|---|

| 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 |
|---|---|

| G F S | D P O |
|---|---|

← Coded word

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 begining 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.

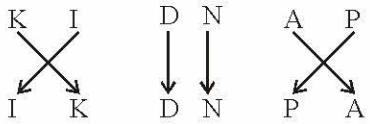
22. (d) Odd-positioned letters are coded as two positions forward and even-positioned letters are coded as three positions forward.

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.

25. (b) A S → S A; S I → S I; G N → N G

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' is 1st in natural series)

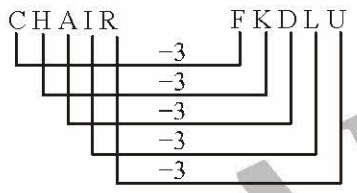
Z X V ⟶ letters in reverse series

A C E ⟶ letters in natural series

↓ ↓ ↓

1st 3rd 5th ⟶ Position of letters

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

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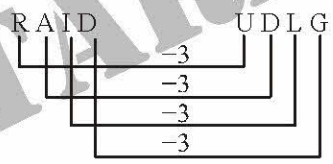
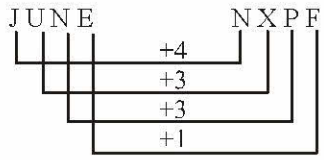



28. (a) The word is coded by moving the letters +4, +3, +2, and +1 steps respectively.

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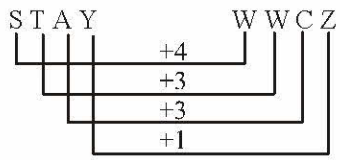



29. (a) The letters of the word are coded by their represented letters in the reverse series.

A C T I O N → letters in natural series

Z X G R L M → letters in reverse series

↓ ↓ ↓ ↓ ↓ ↓

1st 3rd 20th 9th 15th 14th → Position of letters

Similarly,

H E A L T H → letters in natural series

S V Z O G S → letters in reverse series

↓ ↓ ↓ ↓ ↓ ↓

8th 5th 1st 12th 20th 8th → Position of letters

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.

E A R T H Q U A K E → letters

M O G P E N J O S M → code

E Q U A T E → letters to be coded

M N J O P M → answer code

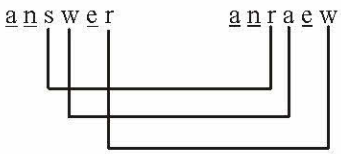
31. (b) Alphabets whose codes are given

w → a

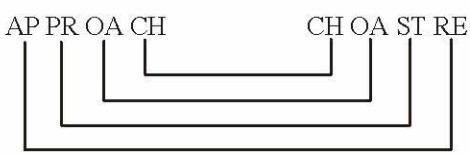
s → r

r → w

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




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




Similarly,