# **Coding and Decoding – Adv**

1.	If in a coding scheme each letter is replaced by the letter immediately
	following it in the alphabet and then the resulting word is reversed,
	what is the code for 'BRAVE'?

- a) FWBSC
- b) CBSWF
- c) FWCBS
- d) SCBWF

Ans) a

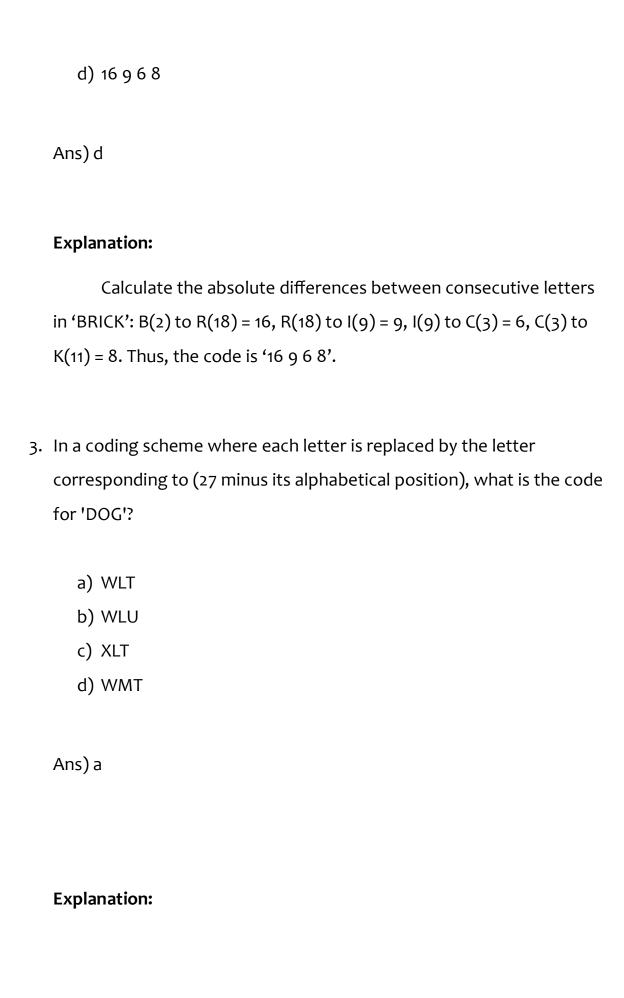
## **Explanation:**

First, each letter of 'BRAVE' is shifted by +1:  $B \rightarrow C$ ,  $R \rightarrow S$ ,  $A \rightarrow B$ ,  $V \rightarrow W$ ,  $E \rightarrow F$ .

Then, the resulting word 'CSBWF' is reversed to form 'FWBSC'.

2. A coding scheme replaces a word with the sequence of absolute differences between the alphabetical positions of consecutive letters. What is the code for 'BRICK'?

- a) 15968
- b) 14 9 6 8
- c) 16 9 7 8



Replacing each letter with the letter at position (27 - its alphabetical value): D(4) becomes (27-4)=23 (W), O(15) becomes (27-15)=12 (L), G(7) becomes (27-7)=20 (T). Thus, 'DOG' becomes 'WLT'.

- 4. In a coding scheme where the code for a word is the product of the alphabetical positions of its first and last letters, what is the code for 'PEAR'?
  - a) 288
  - b) 304
  - c) 256
  - d) 300

Ans) a

## **Explanation:**

The code is the product of the positions of the first and last letters. For 'PEAR': P=16 and R=18, so  $16\times18=288$ .

- 5. A coding scheme replaces each letter with (27 minus its alphabetical position) and then arranges the resulting letters in alphabetical order. What is the code for 'DOG'?
  - a) WTL
  - b) LTW

- c) TLW
- d) LWT

Ans) b

# **Explanation:**

For 'DOG': D=4 becomes 27-4=23 (W); O=15 becomes 27-15=12 (L); G=7 becomes 27-7=20 (T). Arranging these letters in alphabetical order yields 'LTW'.

- 6. In a coding system where each letter is replaced by the letter corresponding to the sum of its alphabetical position and that of its mirror (with the result taken modulo 26, 0 being 26), what is the code for 'DATA'?
  - a) AAAA
  - b) ZZZZ
  - c) BBBB
  - d) AAAAA

Ans) a

### **Explanation:**

For each letter in 'DATA', find its mirror (i.e. letter with position 27 minus the letter's position) and add it to the original letter's position.

For D: 4+23=27, A: 1+26=27, T: 20+7=27, A: 1+26=27. Since 27 mod 26 = 1, every letter becomes A, so the code is 'AAAA'.

- 7. In a cipher that replaces each letter with the letter corresponding to the factorial of its alphabetical position (modulo 26, with 0 treated as 26), what is the code for 'AB'?
  - a) AB
  - b) BA
  - c) AC
  - d) BB

Ans) a

#### **Explanation:**

For 'AB': A=1 gives 1! = 1  $\rightarrow$  A; B=2 gives 2! = 2  $\rightarrow$  B. Thus, the code is 'AB'.