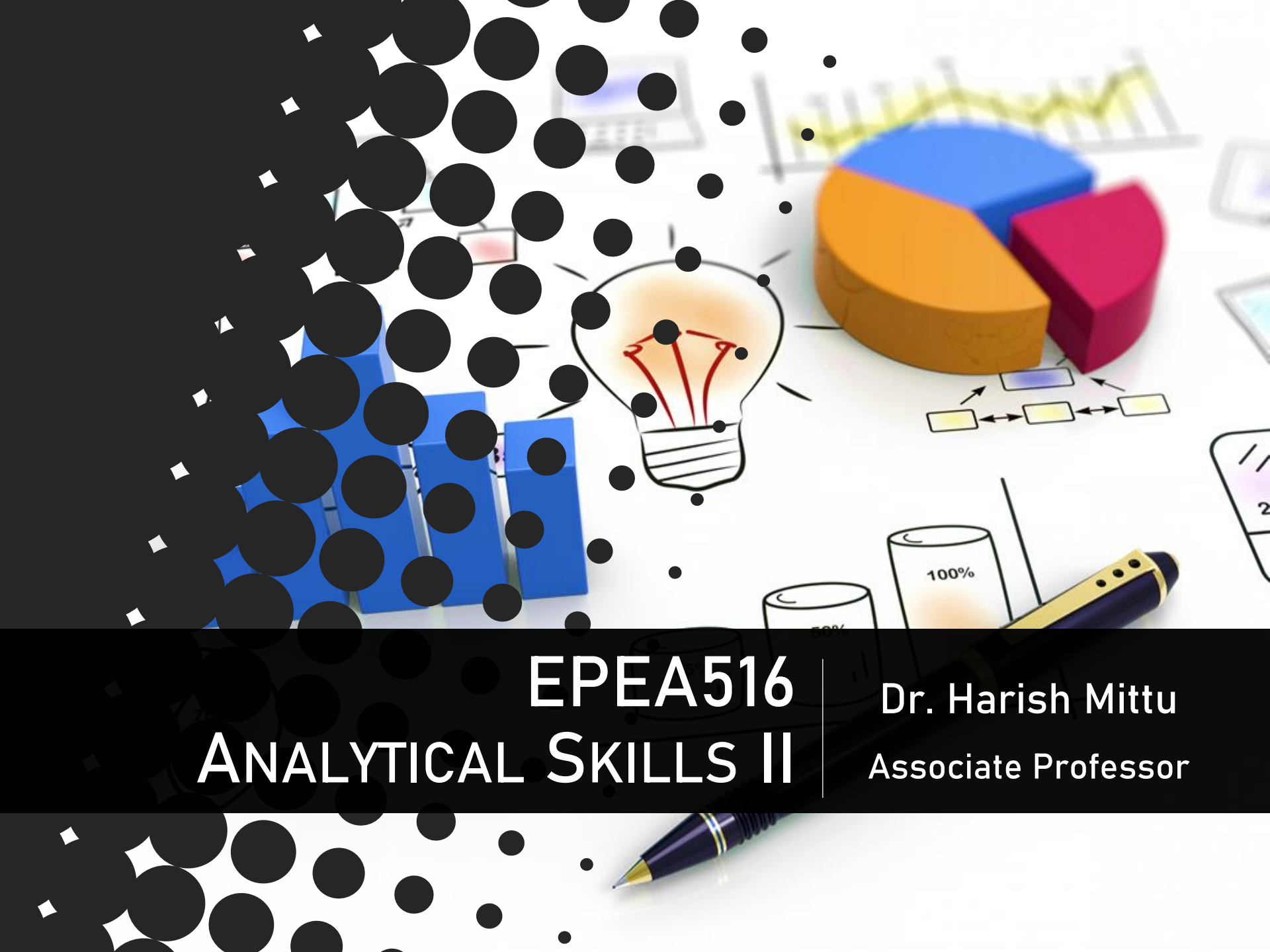

EPEA516
Analytical Skills II

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Learning Outcomes

After this lecture, you will be able to

- develop understanding about the basics of letter coding,
- analyze different types of letter coding,
- solve various problems relating to letter coding.

Coding-Decoding

- Process of Transmitting - Information
- Coding
  - Letter/Sentence/Word
  - Language
  - English Alphabet – Corresponding Positions
- Decoding
  - Tracing Actual Meaning - Letter/Sentence/Word

Forward Order Position

- Linear Arrangement - Left to Right

A	B	C	D	E	F	G	H	I	J
1	2	3	4	5	6	7	8	9	10

K	L	M	N	O	P	Q	R	S	T
11	12	13	14	15	16	17	18	19	20

U	V	W	X	Y	Z
21	22	23	24	25	26

Forward Order Position

- Short-Cut
  - E J O T Y
  - 5 10 15 20 25
  - C F I L O P U X
  - 3 6 9 12 15 18 21 24

Backward Order Position

- Linear Arrangement – Right to Left

A	B	C	D	E	F	G	H	I	J
26	25	24	23	22	21	20	19	18	17

K	L	M	N	O	P	Q	R	S	T
16	15	14	13	12	11	10	9	8	7

U	V	W	X	Y	Z
6	5	4	3	2	1

Backward Order Position

- Short-Cut
  - Backward Order Position of a Letter

    = 27 – Forward Order Position of that Letter
- Example
  - Forward Order Position of C = 03
  - Backward Order Position of C = 27 – 03

    = 24

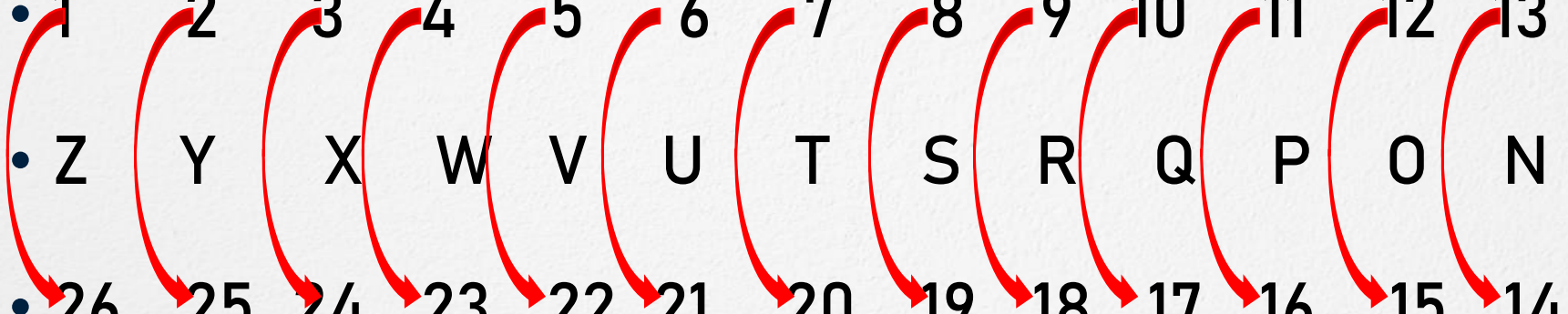
Forward & Backward Order Position

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

Opposite Letters

- Two Letters
- Sum - Corresponding Positions = 27

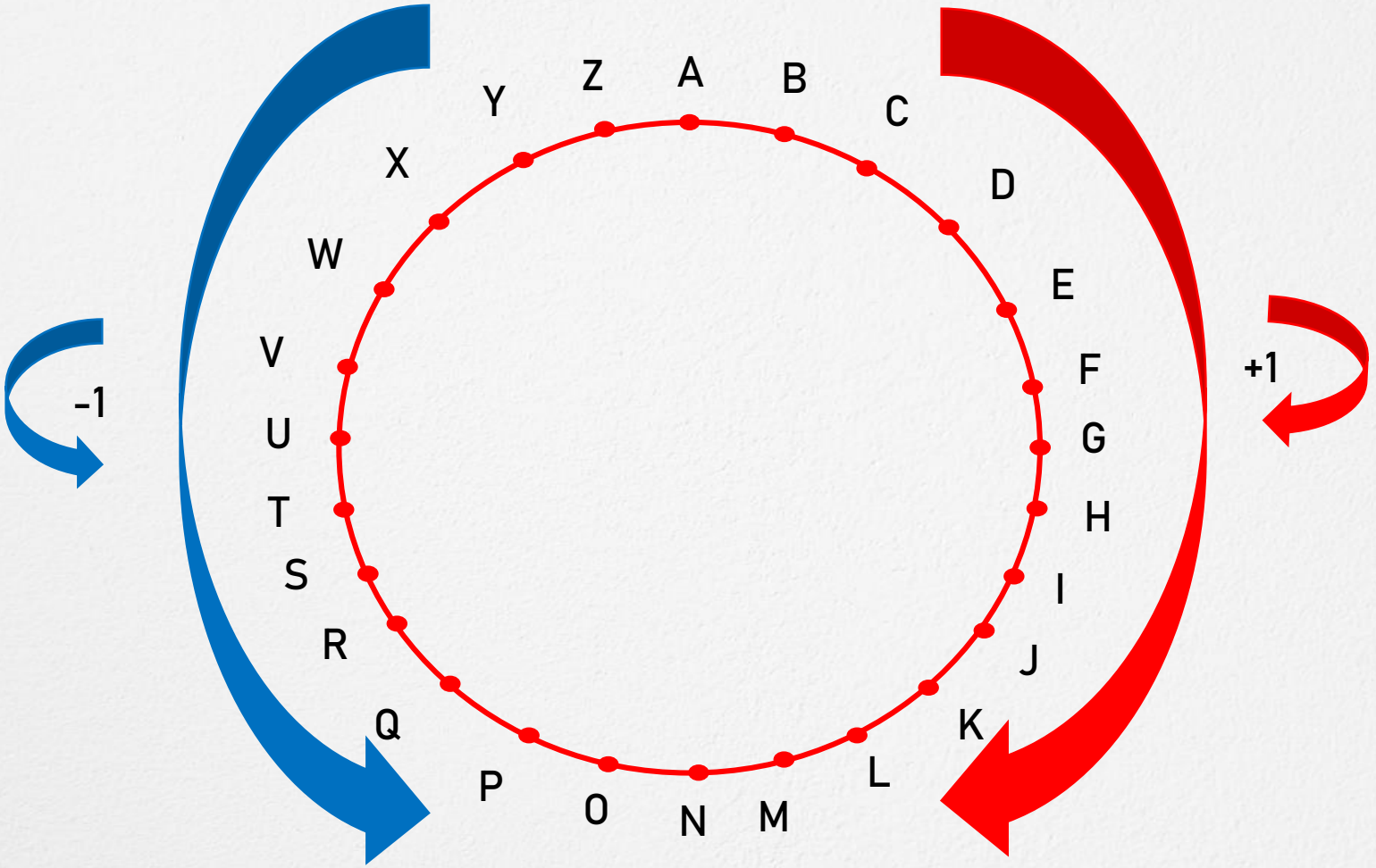
A	B	C	D	E	F	G	H	I	J	K	L	M
1	2	3	4	5	6	7	8	9	10	11	12	13
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26	25	24	23	22	21	20	19	18	17	16	15	14



Pair of Opposite Letters

- AZ Amazing — BY By
- CX Six — DW Dew
- EV Evening — FU Full
- GT GT Road — HS High Score
- IR Indian Railway — JQ Jack Queen
- KP Karl Pearson — LO Low
- MN Man

Clockwise & Anticlockwise



Rearrangement of Letters

- All Letters – Reverse Order
- Example
- If in a certain code language 'DINESH' is written as 'HSENID' then how will 'GENRATOR' be written in that language?
- DINESH - HSENID
- GENRATOR - ROTARNEG

Rearrangement of Letters

- Letter of Word – Two Parts
  - First Part – Reverse Order (Second Part)
- Example
- If in a certain code language 'DINESH' is written as 'ESHNID' then how will 'GENRATOR' be written in that language?
- DIN ESH - ESH NID
- GENR ATOR - ATOR RNEG

Rearrangement of Letters

- Letter of Word – Two Parts
  - Second Part– Reverse Order (First Part)
- Example
- If in a certain code language ‘DINESH’ is written as ‘HSEDIN’ then how will ‘GENRATOR’ be written in that language?
- DIN ESH - HSE DIN
- GENR ATOR - ROTA GENR

Rearrangement of Letters

- Letter of Word – Two Parts
  - Both Parts – Reverse Order
- Example
- If in a certain code language 'DINESH' is written as 'HSENID' then how will 'GENRATOR' be written in that language?
- DIN ESH - NID HSE
- GENR ATOR - RNEG ROTA

Rearrangement of Letters

- Letter of Word – Two Parts
  - Number of Letters - Even
- Example
- If in a certain code language 'VISHNU' is written as 'SIVUNH' then how will 'LANGUAGE' be written in that language?

- VIS HNU - SIV UNH
- LANG UAGE - GNAL EGAU

Rearrangement of Letters

- Letter of Word – Two Parts
  - Number of Letters - Odd
- Example
- If in a certain code language 'KUMAR' is written as 'KUMRA' then how will 'MOUSE' be written in that language?
- KUM AR – KUM RA
- MOU SE - MOU ES

Rearrangement of Letters

- Letter of Word – Two Parts
  - Letter of Word – Two/More Groups – All/Some Reverse Order
- Example
- If in a certain code language 'BOTTLE' is written as 'BOTELT' then how will 'SINGER' be written in that language?

- BOT TLE – BOT ELT
- SIN GER – SIN REG

Rearrangement of Letters

- Letter of Word – Two Parts
  - First & Last Letter (Same Place) – Middle Letters (Reverse Order)
- Example
- If in a certain code language 'MOUNTAIN' is written as 'MIATNUON' then how will 'BROWSER' be written in that language?
- MOUNTAIN – M IATNUO N
- BROWSER – B ESWOR R

Rearrangement of Letters

- Letter of Word – Two Parts
  - Each Letter – Certain Place
- Example
- If in a certain code language 'RIGHT' is written as 'GHRTI' then how will 'WRONG' be written in that language?
- RIGHT – G H R T I
- WRONG – O N W G R

Replacement of Letters

- Forward Sequence Coding
- Increasing Order – English Alphabets
- Example
- If in a certain code language ‘CREATOR’ is written as ‘DSFBUPS’ then how will ‘FIGHTER’ be written in that language?
- CREATOR +1 DSFBUPS
- FIGHTER +1 GJHIUFS

Replacement of Letters

- Backward Sequence Coding
- Decreasing Order – English Alphabets
- Example
- If in a certain code language ‘CREATOR’ is written as ‘BQDZSNQ’ then how will ‘FIGHTER’ be written in that language?
- CREATOR -1 BQDZSNQ
- FIGHTER -1 EHFGSDQ

Replacement of Letters

- Mixed (Forward & Backward) Sequence Coding
- Example
- If in a certain code language ‘GAME’ is written as ‘HXOD’ then how will ‘RACE’ be written in that language?
- GAME –(+1) H (-3) X (+2) O (-1) D
- RACE –(+1) S (-3) X (+2) E (-1) D

Replacement of Letters

- Direct Letter Coding
- Example
- If in a certain code language ‘GOLDEN’ is written as ‘ADHVSR’ and ‘SILVER’ is written as ‘BKHMSQ’ then how will ‘LIVER’ be written in that language?

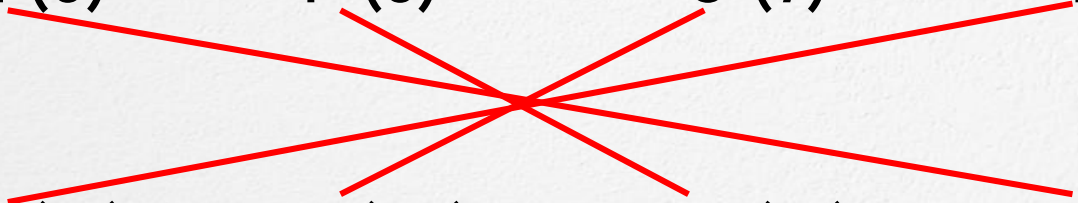
G O L D E N	S I L V E R	L I V E R
A D H V S R	B K H M S Q	H K M S Q

Opposite Letter Coding

- E (5) F (6) G (7) H (8)

- S (22) T (21) U (20) V (19)
- 27 27 27 27

- E (5) F (6) G (7) H (8)

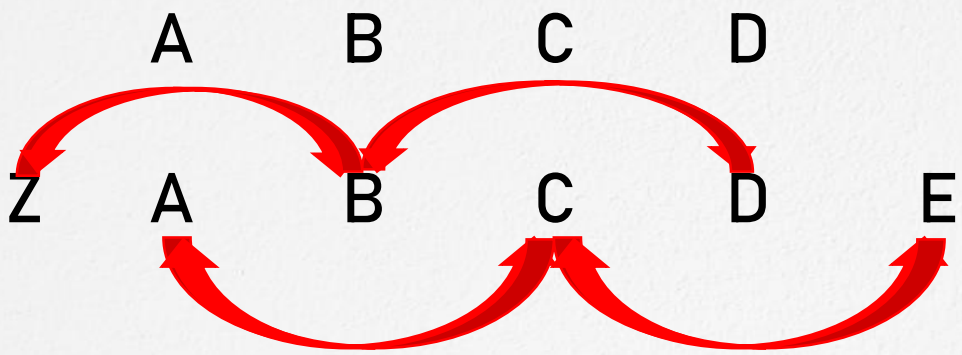


- V (19) T (20) U (21) S (22)
- 27 27 27 27

Opposite Letter Coding

- If in a certain code language 'MLRGLM' is written as 'NOITON' then how will 'ILGXVE' be written in that language?
- M (13) L (12) R (18) G (7) L (12) M (13)
- N (14) O (15) I (11) T (20) O (15) N (14)
- 27 27 27 27 27 27
- I (9) L (12) G (7) X (24) V (22) E (5)
- R (18) O (15) T (20) C (3) E (5) V (22)
- 27 27 27 27 27 27

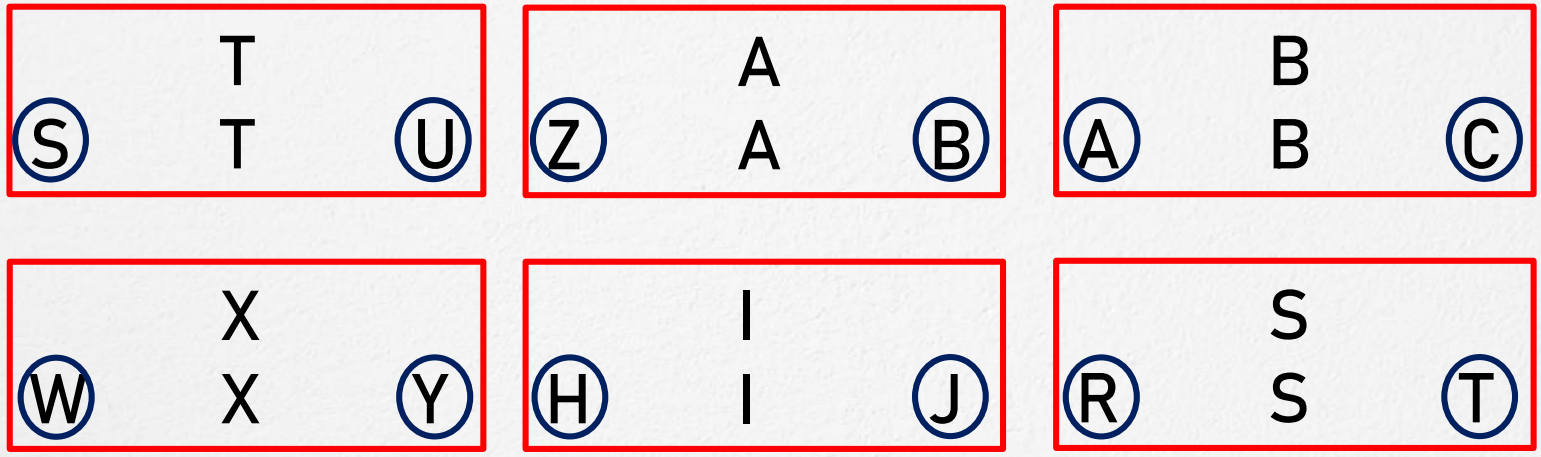
Coding - Left & Right Letters



- ZB AC BD CE
- CE BD AC ZB
- ABCD - ZBACBDCE or BZCADBEC
- ABCD - CEBDACZB or ECDBCABZ

Coding – Left & Right Letters

- If in a certain code language 'TAB' is written as 'SUZBAC' then how will XIS be written in that code?



- WYHJRT

Conclusion

- Coding
  - Hide Meaning
- Decoding
  - Tracing Actual Meaning
- Position of Alphabets
  - Forward & Backward Order
  - Arrangement of Letters – Linear & Circular
  - Opposite Letters

Summary

- Letter Coding
  - Basics
  - Rearrangement of Letters
  - Replacement of Letters
  - Opposite Letter Coding
  - Left & Right Letters Coding

That’s all for now…