

1. The biometric modality is not:

- ☐ fingerprint,
 - ☐ voice,
 - X password or pin (personal identification number),**
 - ☐ iris.
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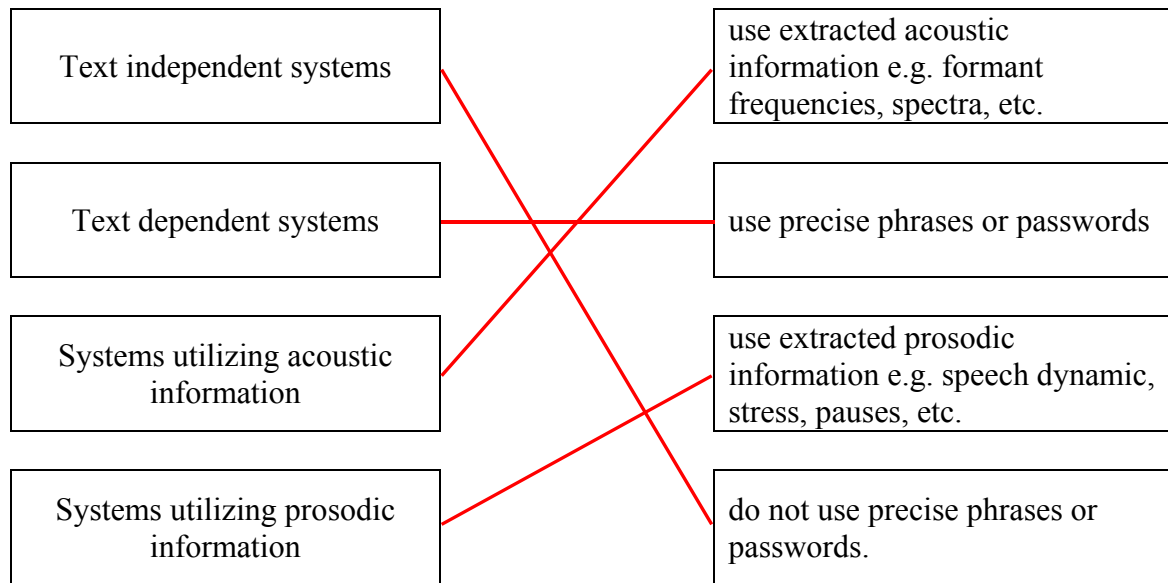
**2. Determine the proper sequence of stages/phases in a general recognition process.
(1 – first, 2 – second, 3 – third, 4 – last).**

- a) **_4_** recognition,
 - b) **_1_** data acquisition,
 - c) **_3_** data registration,
 - d) **_2_** pre-processing.
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3. Multi-level user identification uses:

- ☐ user's voice,
 - ☐ user's face,
 - ☐ credentials as a username, password or PIN,
 - X combination of user's voice, face and credentials.**
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4. Match right definition to each kind of speaker identification system below :**5. Determine the right sequence of operations/ processes in the automatic speech recognition process.
(1 – first, 2 – second, 3 – last).**

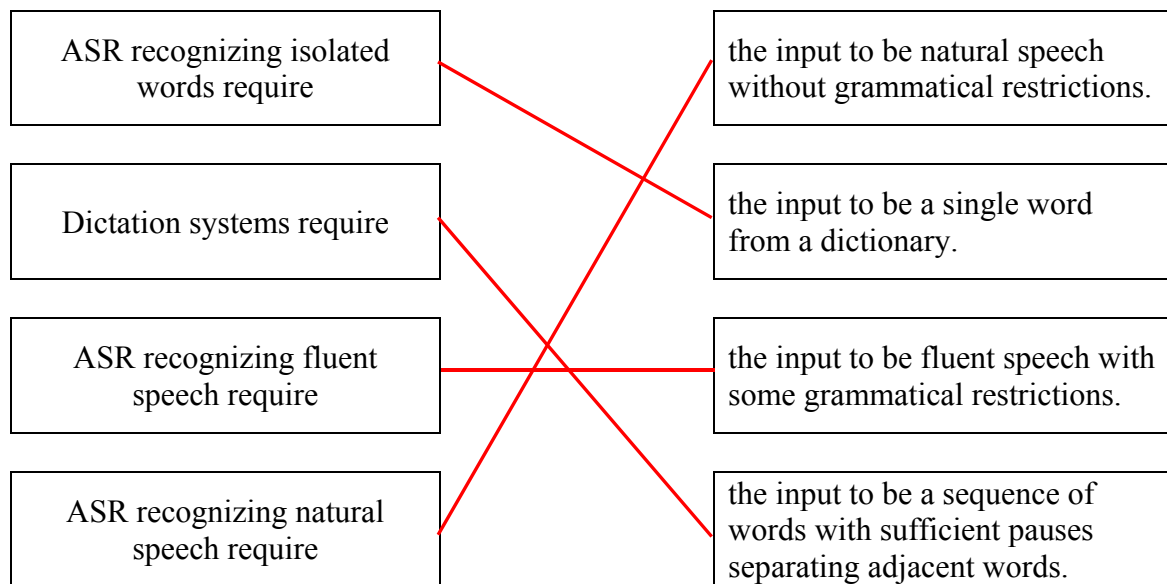
- a) 2 dictionary search,
- b) 1 digital speech signal,
- c) 3 text sequence.

6. The most successful methods for extracting speech feature are:

- ☐ Hidden Markov models,
- X Mel frequency cepstral coefficients,**
- X Perceptual linear prediction,**
- ☐ Discrete cosine transform.



7. Match each automatic speech recognition (ASR) system with its proper input definition.



8. Classify given spectral events/modifications to perceivable and non-perceivable by humans.

Perceivable	Non-perceivable
A	B
C	E
D	F

- A** – Number of formant frequencies,
B – Frequencies laying under the first formant frequency,
C – Location of formant frequencies,
D – Width of formant frequencies,
E – Overall tilt of the spectra,
F – Narrow band stop filtering.



9. The most significant speech recognition methods are:

X Hidden Markov models,

X Dynamic time warping,

☐ Perceptual linear prediction,

☐ Discrete cosine transform.

10. The main purpose of dynamic time warping in speech recognition domain is:

☐ Feature extraction.

X Comparison of two sequences of speech features that differ in time duration and to calculate their similarity.

☐ Calculation of spectral coefficients.

