Iniziato	martedì, 3 maggio 2022, 10:01
Stato	Completato
Terminato	martedì, 3 maggio 2022, 10:20
Tempo impiegato	19 min. 52 secondi
Punteggio	24,00/32,00
Valutazione	**22,50** su un massimo di 30,00 (**75**%)

Domanda 1

Risposta corretta

Punteggio ottenuto 1,00 su 1,00

Which one is NOT an advantage of electrical RF sensors?

- ○ a. Insensitivity to finger contamination, condition, and pressure
- ○ b. Integrability with Si manufacturing processes
- ◉ c. Lower cost compared to optical sensors ✔
- ○ d. Possible to apply thick protective coatings

La risposta corretta è: Lower cost compared to optical sensors

Which is a disadvantage of biometric systems based on face recognition?

- ⦿ a. Low stability over years due to limited permanence of biometric identifiers ✔
- ○ b. Always require RGB cameras
- ○ c. Use of professional high-cost scanners
- ○ d. High failure rates due to electrostatic discharges

La risposta corretta è: Low stability over years due to limited permanence of biometric identifiers

Which wavelengths can be used in multispectral fingerprint scanners?

- ○ a. Blue
- ○ b. Near-infrared
- ○ c. Green
- ○ d. Red
- ⦿ e. Visible spectra and near-infrared ✔

✔

La risposta corretta è: Visible spectra and near-infrared

Capacitive fingerprint sensors are sensitive to contaminations or moisture on the finger:

○ a. True ✔

○ b. False

La risposta corretta è: True

Among the performance parameter of biometric sensors, the dynamic range is:

○ a. The total number of pixels contained in a sensor

○ b. The maximum number of gray levels in the output image

○ c. The magnitude of the noise

○ d. The effective number of gray-levels used ✔

○ e. The density resolution of the imager

La risposta corretta è: The effective number of gray-levels used

Domanda 6

Risposta errata

Punteggio ottenuto 0,00 su 1,00

Which is the advantage of using optical fingerprint scanners with the sheet prism instead of the conventional prism ?

- ⦿ a.   Smaller cost   ✖
- ○ b.   Less color distortion in the output image
- ○ c.   Absence of internal LEDs
- ○ d.   Smaller dimension of the scanner

La risposta corretta è: Smaller dimension of the scanner

Domanda 7

Risposta corretta

Punteggio ottenuto 1,00 su 1,00

When biometric systems operate as verification systems:

- ⦿ a.   The system conducts a one-to-one comparison   ✔
- ○ b.   The subject identity is unknown
- ○ c.   The system conducts a one-to-many comparison

La risposta corretta è: The system conducts a one-to-one comparison

Domanda 8

Risposta corretta

Punteggio ottenuto 1,00 su 1,00

✓

Which of the following is NOT measured in gait identifiers?

○ a. Step width

○ b. Walking speed

○ c. Step length

⦿ d. Foot size ✔

La risposta corretta è: Foot size

Domanda 9

Risposta errata

Punteggio ottenuto 0,00 su 1,00

Iris recognition detect the vein pattern in the sclera:

⦿ a. True ✖

○ b. False

La risposta corretta è: False

Domanda 10

Risposta corretta

Punteggio ottenuto 1,00 su 1,00

The active region of LEDs emitting blue light can be built in:

- a. Si - silicon
- b. None of the answers is correct
- c. SiO2 – silicon dioxide
- d. GaN – gallium nitride ✔

La risposta corretta è: GaN – gallium nitride

Domanda 11

Risposta corretta

Punteggio ottenuto 1,00 su 1,00

Multispectral sensors acquire multiple images of the fingerprint at:

- a. Several polarization status of illumination light
- b. Illumination orientations, as direct illumination or TIR illumination
- c. All answers are correct ✔
- d. Several wavelengths of illumination light

La risposta corretta è: All answers are correct

Which of the following does sensor can detect pattern below the surface of the skin?

- ○ a. Optical fiber
- ◉ b. Multispectral sensor image ✔
- ○ c. None of the above
- ○ d. FTIR sheet
- ○ e. FTIR

La risposta corretta è: Multispectral sensor image

Which is the disadvantage of electrical RF sensor?

- ○ a. Not possible to apply thick protective coatings
- ◉ b. Higher cost compared to optical sensors ✔
- ○ c. Integrability with Si manufacturing processes
- ○ d. Sensitivity to finger contamination, condition, and pressure

La risposta corretta è: Higher cost compared to optical sensors

During the electroluminescence phenomena of LEDs, free electrons in the conduction band of the n-doped region recombine with holes of the p-doped region:

- a. False
- ◉ b. True ✔

La risposta corretta è: True

In the biometric systems, which module contains an electronic transducer converting the biometric information into an electronic signal?

- a. Storage module
- b. Matching module
- c. Decision module
- ◉ d. Capture module ✔

La risposta corretta è: Capture module

Risposta corretta

Punteggio ottenuto 1,00 su 1,00

Retinal identification uses cheap and small scanners:

- ○ a. True
- ● b. False ✔

La risposta corretta è: False

Risposta corretta

Punteggio ottenuto 1,00 su 1,00

Which fingerprint sensor is in the group of optical sensors?

- ○ a. Piezoelectric
- ● b. Multispectral ✔
- ○ c. MEMS
- ○ d. Capacitive
- ○ e. Ultrasonic

La risposta corretta è: Multispectral

Domanda 18

Risposta corretta

Punteggio ottenuto 1,00 su 1,00

Optical fingerprint sensors are based on three key elements:

- ⦿ a. A light source, an optical system, and an image sensor ✔
- ○ b. A LED, a prism, and an image sensor
- ○ c. A LED, a lens, and a light-emitting polymer
- ○ d. A light source, a prism, and an image sensor

La risposta corretta è: A light source, an optical system, and an image sensor

Domanda 19

Risposta corretta

Punteggio ottenuto 1,00 su 1,00

In active thermal sensors, each pixels generate an electrical radio-frequency pulse signal:

- ⦿ a. False ✔
- ○ b. True

La risposta corretta è: False

Risposta errata

Punteggio
ottenuto 0,00
su 1,00

The output resolution of a capacitive fingerprint scanner is:

- a. The true internal physical resolution of the sensor (pixels per inch)
- b. None of the above answers are correct
- c. Related to the number of bits used to encode the intensity value of each pixel ✗
- d. Defined as the total number of pixel of the sensor

La risposta corretta è: None of the above answers are correct

Risposta corretta

Punteggio
ottenuto 1,00
su 1,00

Which of the following sensors is suitable for fingerprint swipe scanners?

- a. Multispectral
- b. Capacitive ✓
- c. Optical FTIR
- d. Passive thermal

La risposta corretta è: Capacitive

Which fingerprint sensors are considered solid-state sensors?

- a. Capacitive ✔
- b. FTIR with sheet prism
- c. FTIR
- d. Multispectral
- e. Sensors based on CCD/CMOS cameras

La risposta corretta è: Capacitive

Which of the following techniques is not used to detect latent fingerprints that are not clearly visible?

- a. Powder dusting
- b. All of the above techniques are used ✘
- c. Melting wax
- d. Chemical developers
- e. Vacuum metal deposition
- f. Cyanoacrylate fuming

La risposta corretta è: Melting wax

CCD/CMOS cameras can capture the iris features:

- a. True ✓
- b. False

La risposta corretta è: True

Which biometric traits are behavioral identifiers?

- a. Voice and gait ✓
- b. None of the answers is correct
- c. Iris and retina
- d. Face and ear geometry
- e. Fingerprint and handprint

La risposta corretta è: Voice and gait

Domanda 26

Risposta corretta

Punteggio ottenuto 1,00 su 1,00

Which element is considered an inherence factor in biometrics?

- ○ a. Password
- ○ b. Security token
- ○ c. Personal door key
- ● d. Fingerprint ✔

La risposta corretta è: Fingerprint

Domanda 27

Risposta corretta

Punteggio ottenuto 1,00 su 1,00

Retinal identification scanners use near-infrared light:

- ○ a. False
- ● b. True ✔

La risposta corretta è: True

In forensic science, human fingerprints are classified in:

- ○ a. Metal print, plastic print, and organic print
- ○ b. Latent print and plastic print
- ○ c. Latent print and non-visible print
- ● d. Patent print, latent print, and plastic print ✔

La risposta corretta è: Patent print, latent print, and plastic print

Which fingerprint sensor can be integrated within the screens of smartphones on a unique substrate?

- ○ a. On-cell electro-optical sensors
- ● b. Capacitive sensors ✘
- ○ c. All solid-state fingerprint sensors
- ○ d. Pyroelectric sensors
- ○ e. Optical FTIR with conventional prism

La risposta corretta è: On-cell electro-optical sensors

For a capacitive sensor, which of the following statements is FALSE?

- ○ a. In these sensors the capacitance decreases as the distance from chip to surface increases
- ○ b. These sensors are insensitive to finger condition (eg to contamination or moisture on the finger)
- ○ c. In more accurate models of capacitive sensors also fringing effects must be considered
- ◉ d. Capacitive sensors are harder to spoof than optical sensors based on a single camera   ✖

La risposta corretta è: These sensors are insensitive to finger condition (eg to contamination or moisture on the finger)

Which of the following part is NOT included in the structure of PMOLEDs?

- ○ a. Substrate
- ◉ b. Strips of anodes   ✖
- ○ c. Sapphire layer
- ○ d. Organic polymer layers

La risposta corretta è: Sapphire layer

✖

What is the most important feature extracted during the iris recognition?

- ○ a. Geometrical pattern of the retina
- ○ b. Color of eyes
- ○ c. Sclera veins pattern
- ● d. Pores ✖
- ○ e. Crypts
- ○ f. All answers are correct

La risposta corretta è: Crypts

DOCUMENTAZIONE

Moodle

Kaltura