

Telecommunications and Human Biology

Telecommunications · Practice Test · 12 Questions

1. What is the primary type of electromagnetic radiation emitted by mobile phones, which is classified as non-ionizing?

- A) Gamma rays
- B) X-rays
- C) Radiofrequency fields
- D) Ultraviolet radiation

2. According to the International Agency for Research on Cancer (IARC), radiofrequency electromagnetic fields are categorized as what?

- A) Group 1: Carcinogenic to humans
- B) Group 2B: Possibly carcinogenic to humans
- C) Group 3: Not classifiable as to its carcinogenicity
- D) Group 4: Probably not carcinogenic

3. Which part of the human body is most likely to absorb the highest amount of radiofrequency energy during a mobile phone call?

- A) The liver
- B) The hands
- C) The brain
- D) The feet

4. What is the unit of measurement used to quantify the rate at which the human body absorbs radiofrequency energy from mobile devices?

- A) Specific Absorption Rate (SAR)
- B) Decibels (dB)
- C) Hertz (Hz)
- D) Lumens (lm)

5. Which biological effect is the only established mechanism through which radiofrequency radiation interacts with human tissue?

- A) Genetic mutation
- B) Thermal heating
- C) Cellular dehydration
- D) Neurological stimulation

6. At what frequency range do typical 5G telecommunication networks operate, which are largely blocked by the outer layers of human skin?

- A) Extremely Low Frequency (ELF)
- B) Millimeter waves
- C) Ionizing ultraviolet spectrum
- D) Infrared thermal spectrum

7. What is the standard safety limit for mobile phone SAR levels in many countries, typically expressed in watts per kilogram (W/kg) of tissue?

- A) 1.6 to 2.0 W/kg
- B) 5.0 to 10.0 W/kg
- C) 0.1 to 0.5 W/kg
- D) 10.0 to 20.0 W/kg

8. Which human sensory organ has been studied for potential effects from high-intensity radiofrequency exposure, though results remain inconclusive regarding long-term harm?

- A) The kidneys
- B) The ocular lens
- C) The pancreas
- D) The spleen

9. What telecommunications-related condition is often associated with the frequent use of mobile devices due to prolonged neck flexion?

- A) Carpal tunnel syndrome
- B) Text neck
- C) Tinnitus
- D) Restless leg syndrome

10. Radiofrequency signals from base stations typically decrease in power density according to which physical law as distance from the source increases?

- A) Inverse-square law
- B) Hooke's law
- C) Newton's third law
- D) Ohm's law

11. What is the primary method by which modern telecommunications devices (like smartphones) minimize the amount of radiation emitted by automatically adjusting power levels?

- A) Pulse-width modulation
- B) Adaptive Power Control (APC)
- C) Phase-shifting
- D) Frequency hopping

12. Which of the following is an established physiological effect of excessive blue light exposure from telecommunication screens on the human circadian rhythm?

- A) Increased production of melatonin
- B) Suppression of melatonin secretion
- C) Permanent retinal detachment
- D) Enhanced long-term memory formation