

Telecommunications and Human Biology

Telecommunications · Answer Key · 20 Questions

1. What type of wave do mobile phones use to transmit signals that also passes through human tissue?

- A) Sound waves
- B) Radio waves**
- C) Water waves
- D) Mechanical waves

2. Which part of the human eye is most commonly associated with light-based communication, such as fiber optics?

- A) The retina**
- B) The cornea
- C) The iris
- D) The lens

3. In a cochlear implant, which body part is directly stimulated by electrical signals to help a person hear?

- A) The eardrum
- B) The auditory nerve**
- C) The outer ear
- D) The throat

4. Which form of radiation used in telecommunications is classified as 'non-ionizing', meaning it lacks enough energy to damage DNA?

- A) X-rays
- B) Gamma rays
- C) Radiofrequency energy**
- D) Ultraviolet light

5. What physical phenomenon occurs when telecommunication devices are placed near sensitive medical equipment like pacemakers?

- A) Electromagnetic interference**
- B) Biological regeneration
- C) Cellular mutation
- D) Refraction

6. The human brain communicates internally using signals that are similar to which component of electronic telecommunications?

- A) Direct current
- B) Electrical impulses**
- C) Fiber optic light
- D) Mechanical vibration

7. Which body part is most sensitive to the thermal effects of high-intensity radiofrequency exposure?

- A) The skin
- B) The eyes**
- C) The lungs
- D) The fingernails

8. In telecommunications, 'latency' refers to delay; in human biology, what is the delay between a stimulus and a physical reaction called?

- A) Reflex time
- B) Reaction time**
- C) Sleep cycle
- D) Metabolism

9. Which type of telecommunication light is invisible to the human eye but used in infrared remote controls?

- A) Ultraviolet
- B) Infrared**
- C) Visible light
- D) X-ray

10. What is the primary way the human body maintains its temperature, a process that can be studied in relation to external heat sources like electronic devices?

- A) Thermoregulation**
- B) Photosynthesis
- C) Electrolysis
- D) Osmosis

11. Which sensory organ converts light waves into signals for the brain, similar to how a photo-sensor works in optical telecommunications?

- A) The nose
- B) The skin
- C) The eye**
- D) The tongue

12. What do telecommunication systems and human nervous systems both require to transmit information effectively?

A) A pathway

- B) A digestive system
- C) A muscular system
- D) A skeleton

13. Which term describes the process of encoding information, such as the brain encoding memories or a modem encoding data?

A) Encoding

- B) Digestion
- C) Exhalation
- D) Perspiration

14. Radiofrequency telecommunications operate on specific frequencies, much like how the human ear identifies different:

A) Pitches of sound

- B) Colors of light
- C) Smells
- D) Textures

15. Which common telecommunication device requires the user to place it against the ear to transmit sound waves to the auditory canal?

A) Smartphone

- B) Satellite dish
- C) Fiber optic cable
- D) Router

16. What is the unit of frequency used to measure both telecommunication signals and human brain waves?

A) Hertz

- B) Joules
- C) Watts
- D) Volts

17. Which part of the human nervous system acts as the main 'signal hub' for transmitting information, similar to a telecommunications network switch?

A) The spinal cord

- B) The stomach
- C) The liver
- D) The bone

18. Exposure to excessive noise from telecommunication headsets can cause damage to which internal ear structure?

A) Cochlea

B) Earlobe

C) Pinna

D) Eardrum

19. Which natural telecommunication system allows humans to share complex information through sound vibrations in the air?

A) Speech

B) Breathing

C) Digestion

D) Walking

20. What does the human body use to protect the 'cables' of the nervous system, similar to insulation on copper telecommunication wires?

A) Myelin sheath

B) Skin

C) Hair

D) Blood