

Classical Music and Physiology

Classical Music · Answer Key · 20 Questions

1. What physiological effect is commonly observed in listeners when listening to slow-tempo classical music (60-80 beats per minute)?

- A) Increased adrenaline production
- B) Decreased resting heart rate**
- C) Elevated core body temperature
- D) Increased cortisol levels

2. Which hormone, associated with stress reduction, has been shown to increase in patients listening to Mozart's compositions?

- A) Insulin
- B) Dopamine**
- C) Cortisol
- D) Melatonin

3. What is the 'Mozart Effect' popularly hypothesized to temporarily enhance in human cognitive performance?

- A) Spatial-temporal reasoning**
- B) Long-term memory retention
- C) Physical muscle strength
- D) Visual color perception

4. How does listening to classical music often affect the autonomic nervous system?

- A) It triggers the fight-or-flight response
- B) It stimulates the sympathetic nervous system
- C) It promotes parasympathetic nervous system activity**
- D) It causes autonomic nervous system failure

5. In clinical settings, classical music is frequently used to manage the perception of what physical sensation?

- A) Chronic pain**
- B) Bone density loss
- C) Hyperglycemia
- D) Muscle atrophy

6. What happens to the rate of respiration in many individuals when they are exposed to rhythmic, structured classical music?

- A) It becomes erratic and irregular
- B) It synchronizes with the musical tempo**
- C) It increases significantly
- D) It stops temporarily

7. Studies suggest that listening to classical music before sleep can improve sleep quality by reducing the activity of which gland?

- A) Pineal gland
- B) Pituitary gland
- C) Adrenal gland**
- D) Thyroid gland

8. Which structural feature of the brain has been shown to be more developed in professional classical musicians compared to non-musicians?

- A) Corpus callosum**
- B) Medulla oblongata
- C) Cerebellum
- D) Occipital lobe

9. Musical training in classical instruments is linked to improved neuroplasticity, specifically affecting which part of the brain responsible for motor skills?

- A) Prefrontal cortex
- B) Primary motor cortex**
- C) Amygdala
- D) Hippocampus

10. Listening to classical music has been scientifically linked to a reduction in blood pressure, specifically which measurement?

- A) Systolic blood pressure**
- B) Diastolic blood pressure
- C) Pulse pressure
- D) Mean arterial pressure

11. The study of music therapy indicates that classical music can help stimulate the release of which natural analgesic in the brain?

- A) Endorphins**
- B) Adrenaline
- C) Glucagon
- D) Thyroxine

12. For patients recovering from surgery, classical music is often used to lower the dosage requirement of which type of medication?

- A) Antihistamines
- B) Antibiotics
- C) Analgesics**
- D) Antacids

13. Classical music with a regular, steady beat is often used in physical rehabilitation to assist with the regulation of what?

- A) Gait and movement coordination**
- B) Blood clotting speed
- C) Digestive metabolism
- D) Reflex reaction time

14. What effect does consistent practice of classical music have on the gray matter density in the auditory cortex?

- A) It decreases density
- B) It remains unchanged
- C) It increases density**
- D) It causes atrophy

15. Music-based interventions for dementia patients often utilize familiar classical pieces to stimulate which type of memory?

- A) Procedural memory
- B) Autobiographical memory**
- C) Sensory memory
- D) Short-term working memory

16. During active music making, such as playing a string instrument, which sensory-motor integration is most highly taxed?

- A) Auditory-motor mapping**
- B) Olfactory-visual mapping
- C) Gustatory-tactile mapping
- D) Vestibular-visual mapping

17. Research suggests that classical music can reduce the time taken to fall asleep by influencing which neurotransmitter?

- A) Serotonin**
- B) GABA
- C) Dopamine
- D) Acetylcholine

18. The 'entrainment' effect in music therapy refers to the human body's tendency to do what?

A) Resist external rhythmic stimuli

B) Align biological rhythms to an external stimulus

C) Completely ignore auditory input

D) Increase muscle tension in response to sound

19. Which brain wave pattern, associated with relaxation, is often increased by listening to sedative classical music?

A) Beta waves

B) Gamma waves

C) Alpha waves

D) Delta waves

20. In the context of the human auditory system, the perception of pitch in classical music is primarily processed in which structure?

A) Cochlea

B) Pinna

C) Eardrum

D) Stapes