

Creative Writing and Human Physiology

Creative Writing · Answer Key · 20 Questions

1. Which part of the human brain is most responsible for the executive functions required for complex narrative structuring in creative writing?

- A) Cerebellum
- B) Prefrontal cortex**
- C) Occipital lobe
- D) Brainstem

2. Long-term writing habits and creative thought processes are associated with increased synaptic plasticity, which is primarily facilitated by the release of which neurotrophic protein?

- A) BDNF**
- B) Insulin
- C) Myoglobin
- D) Collagen

3. Chronic stress during the creative process can elevate levels of cortisol, a hormone secreted by which endocrine glands?

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

4. The fine motor skills required for manual pen-and-paper writing are controlled by the primary motor cortex, which is located in which lobe of the cerebrum?

- A) Temporal
- B) Parietal
- C) Frontal**
- D) Occipital

5. Visual processing of text during proofreading relies on the transduction of light into signals within which layer of the human eye?

- A) Cornea
- B) Iris
- C) Retina**
- D) Lens

6. Research suggests that reading creative fiction can improve 'Theory of Mind', a cognitive ability localized in the temporoparietal junction, which helps humans do what?

A) Understand others' mental states

- B) Regulate body temperature
- C) Coordinate limb movement
- D) Store episodic memories

7. Carpal tunnel syndrome, a common occupational injury for intensive writers, involves the compression of which specific nerve?

- A) Ulnar nerve
- B) Radial nerve

C) Median nerve

- D) Axillary nerve

8. The circadian rhythm, which dictates the optimal time of day for creative cognitive output, is regulated by the suprachiasmatic nucleus located in which brain structure?

A) Hypothalamus

- B) Thalamus
- C) Hippocampus
- D) Amygdala

9. Writing by hand involves 'haptic perception', which is the sensory processing of information gathered through which bodily system?

- A) Auditory
- B) Olfactory

C) Tactile

- D) Gustatory

10. Prolonged sitting while writing can lead to 'tech neck', a strain caused by the misalignment of which part of the skeletal system?

- A) Lumbar vertebrae

B) Cervical spine

- C) Pelvic girdle
- D) Thoracic cage

11. The production of speech and written language, specifically the motor programming of language, is primarily attributed to which area of the brain?

- A) Wernicke's area

B) Broca's area

- C) Fusiform gyrus
- D) Angular gyrus

12. Creative writers often experience 'flow state', which is characterized by a temporary decrease in activity in the dorsolateral prefrontal cortex, a phenomenon known as what?

- A) Hyperfrontalization
- B) Hypofrontality**
- C) Synaptic pruning
- D) Myelination

13. The process of 'writing to heal' or expressive writing has been shown to modulate the immune system, specifically by increasing the activity of which type of cells?

- A) T-lymphocytes**
- B) Red blood cells
- C) Platelets
- D) Osteocytes

14. Which neurotransmitter, often linked to the 'reward' of finishing a creative piece, is the primary chemical messenger involved in the brain's pleasure circuits?

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

15. The autonomic nervous system, which manages involuntary responses during intense creative focus, consists of which two primary branches?

- A) Central and Peripheral
- B) Somatic and Enteric
- C) Sympathetic and Parasympathetic**
- D) Endocrine and Exocrine

16. Auditory imagery in creative writing--describing sounds--activates the primary auditory cortex located within which lobe?

- A) Temporal**
- B) Frontal
- C) Parietal
- D) Occipital

17. To maintain healthy eye function during long hours of screen-based writing, the '20-20-20 rule' helps prevent digital eye strain by relaxing which ocular muscle?

- A) Ciliary muscle**
- B) Orbicularis oculi
- C) Lateral rectus
- D) Superior oblique

18. The hippocampus, essential for storing the vast amount of knowledge used in creative world-building, is primarily associated with which human function?

A) Balance

B) Memory formation

C) Reflexes

D) Digestion

19. Writing-induced physical fatigue is often mitigated by the movement of lymph fluid, which relies on what for circulation throughout the body?

A) Heart contractions

B) Skeletal muscle pump

C) Capillary pressure

D) Liver filtration

20. The metabolic cost of heavy cognitive tasks, such as plotting a novel, requires the brain to consume a significant percentage of the body's total intake of which molecule?

A) Nitrogen

B) Glucose

C) Carbon dioxide

D) Calcium