

Scientific Foundations of Drama and Theatre

Drama & Theatre · Answer Key · 16 Questions

1. The phenomenon of 'entrainment' in audience response, where individuals synchronize their physiological and emotional states, is most closely linked to which neurobiological mechanism?

A) Mirror neuron system activation

- B) Dopamine reward pathway stimulation
- C) Serotonin reuptake inhibition
- D) GABAergic neurotransmission modulation

2. Research in cognitive psychology suggests that the heightened emotional impact of tragic theatre, often described as 'catharsis,' can be explained by the interplay between which two cognitive processes?

A) Cognitive reappraisal and emotional contagion

- B) Attentional bias and schema activation
- C) Emotional distancing and implicit memory recall
- D) Perceptual priming and cognitive dissonance

3. The effectiveness of theatrical lighting in shaping audience perception and emotional response is partly attributable to established principles of psychophysics, specifically the relationship between wavelength and:

- A) Color saturation
- B) Luminance intensity

C) Perceived hue

- D) Temporal frequency

4. Studies in acoustics have demonstrated that the 'presence' and clarity of sound in a theatre are significantly influenced by the ratio of direct sound to reverberant sound. What is the optimal ratio for speech intelligibility in a typical proscenium theatre?

A) A high direct-to-reverberant ratio (e.g., > 5 dB)

- B) A balanced direct-to-reverberant ratio (e.g., 0-5 dB)
- C) A low direct-to-reverberant ratio (e.g., < -5 dB)
- D) The ratio is irrelevant if the overall loudness is sufficient

5. The psychological principle of 'embodied cognition' suggests that our thoughts and emotions are influenced by our bodily states. In acting, this is often leveraged through techniques focusing on physical postures and gestures. Which of the following is a scientifically supported outcome of adopting certain physical postures related to perceived power?

- A) Increased levels of testosterone and decreased cortisol**
- B) Decreased levels of dopamine and increased serotonin
- C) Increased parasympathetic nervous system activity
- D) Decreased muscle tension and improved proprioception

6. The perception of depth and spatial relationships on a two-dimensional stage is heavily reliant on visual cues. Which of the following is a monocular cue that artists utilize to create the illusion of distance?

- A) Binocular disparity
- B) Convergence
- C) Linear perspective**
- D) Interposition

7. The 'uncanny valley' effect, where something that is almost, but not perfectly, human-like elicits feelings of revulsion, has implications for the design of certain theatrical elements. This effect is primarily attributed to:

- A) Conflicting perceptual cues related to familiar human features**
- B) The brain's difficulty in categorizing ambiguous stimuli
- C) A primal fear response triggered by perceived deformity
- D) Disruption of established social interaction schemas

8. In the field of performance analysis, theories of 'narrative transportation' posit that audiences become deeply immersed in a story. This immersion is characterized by a reduction in awareness of the surrounding environment and an increase in emotional engagement. Which of the following brain regions is consistently activated during narrative transportation?

- A) Dorsolateral prefrontal cortex
- B) Medial prefrontal cortex and posterior cingulate cortex**
- C) Amygdala and hippocampus
- D) Auditory cortex and visual cortex

9. The physiological response of 'chills' or 'frisson' experienced during powerful theatrical moments is linked to the release of which neurotransmitter?

- A) Endorphins**
- B) Serotonin
- C) Adrenaline
- D) Melatonin

10. The theatrical convention of the 'fourth wall' can be understood through the lens of psychological distancing. When the fourth wall is 'broken,' what cognitive process is often disrupted for the audience?

- A) Attentional filtering
- B) Schema assimilation
- C) Cognitive load management
- D) Self-awareness and self-perception**

11. The perception of rhythmic synchrony in music and theatre, leading to feelings of unity and shared experience, is underpinned by the brain's ability to process temporal patterns. Which auditory processing mechanism is crucial for this?

- A) Auditory adaptation
- B) Auditory stream segregation
- C) Neural phase locking**
- D) The cocktail party effect

12. The concept of 'affordances' from ecological psychology, as applied to set design, refers to the perceived and actual properties of a theatrical space that determine how it can be used. Which of the following is an example of an affordance in a stage setting?

- A) The color of a prop
- B) The inherent stability of a platform to be stood upon**
- C) The symbolic meaning of a costume
- D) The historical accuracy of a piece of furniture

13. The study of stage direction and blocking in terms of proxemics, the study of spatial relationships, reveals how proximity between characters influences audience perception of their relationships. What does a decrease in interpersonal distance typically signal in non-verbal communication?

- A) Increased formality and social distance
- B) Decreased intimacy and trust
- C) Increased intimacy and dominance/submissiveness dynamics**
- D) Neutrality and lack of emotional connection

14. The effectiveness of vocal projection in theatre is not merely about loudness but also about articulation and resonance. Which acoustic principle allows a performer's voice to carry effectively in a large space without amplification?

- A) The Doppler effect
- B) Constructive and destructive interference
- C) The inverse square law of sound intensity
- D) Resonance and sympathetic vibration**

15. The phenomenon of 'collective effervescence,' as described by Durkheim and applied to group performances, suggests that shared emotional intensity in a theatre audience can lead to a heightened sense of social bonding. This is facilitated by:

- A) Individual critical analysis of the performance
- B) The mirroring of emotional and physiological responses**
- C) The rational processing of dramatic themes
- D) A deliberate withdrawal from emotional engagement

16. The psychological impact of surprise or unexpected plot twists in drama is often studied through the lens of 'violated expectations.' This surprise is most potent when it subverts which cognitive construct?

- A) Perceptual set
- B) Working memory capacity
- C) Implicit bias
- D) Predictive coding models**