

Anatomy & Physiology (Division B)
Mesa-Wilson Invitational Science Olympiad Tournament 2017

Team Name: _____ **KEY** _____ Team # _____

Student Members: _____

-----For Scorer Use Only-----

Score: /68

Rank:

Tie Breaker Score (only if tied): /10

- | | | |
|------------------|----------------------|--------------------------------|
| 1. <u> C </u> | 24. <u> C </u> | 47. <u> True </u> |
| 2. <u> B </u> | 25. <u> A </u> | 48. <u> False </u> |
| 3. <u> D </u> | 26. <u> B </u> | 49. <u> False </u> |
| 4. <u> A </u> | 27. <u> A </u> | 50. <u> pseudo-unipolar </u> |
| 5. <u> D </u> | 28. <u> A </u> | 51. <u> microglia </u> |
| 6. <u> A </u> | 29. <u> C </u> | 52. <u> pyramids </u> |
| 7. <u> C </u> | 30. <u> B </u> | 53. <u> fibrous </u> |
| 8. <u> A </u> | 31. <u> B </u> | 54. <u> static </u> |
| 9. <u> C </u> | 32. <u> C </u> | 55. <u> hypersecretion </u> |
| 10. <u> B </u> | 33. <u> D </u> | 56. <u> G </u> |
| 11. <u> G </u> | 34. <u> A </u> | 57. <u> B </u> |
| 12. <u> C </u> | 35. <u> E </u> | 58. <u> J </u> |
| 13. <u> C </u> | 36. <u> A </u> | 59. <u> I </u> |
| 14. <u> F </u> | 37. <u> C </u> | 60. <u> A </u> |
| 15. <u> A </u> | 38. <u> B </u> | 61. <u> D </u> |
| 16. <u> B </u> | 39. <u> C </u> | 62. <u> G </u> |
| 17. <u> B </u> | 40. <u> True </u> | 63. <u> E </u> |
| 18. <u> B </u> | 41. <u> False </u> | 64. <u> E </u> |
| 19. <u> C </u> | 42. <u> True </u> | 65. <u> B </u> |
| 20. <u> C </u> | 43. <u> False </u> | 66. <u> F </u> |
| 21. <u> A </u> | 44. <u> False </u> | 67. <u> C </u> |
| 22. <u> A </u> | 45. <u> False </u> | 68. <u> A </u> |
| 23. <u> B </u> | 46. <u> False </u> | |

Please answer Tie Breaker Questions on the back →

TB 1

Only pain receptors are stimulated at very hot or very cold temperatures. **(1 point)**.

Cold receptors don't work below 12 °C and warm receptors don't work above 47 °C. **(1 point)**.

TB 2

They would quickly diffuse out the capillaries and be degraded by the enzymes of the liver and lungs **(1 point)** or be removed from the body by the kidneys **(1 point)**.

Circulating hydrolytic enzymes can also metabolize free lipid-soluble hormones and the breakdown products would be excreted in the urine or bile **(1 point)**.

TB 3

Tears from the surface of the eyeball drain through the lacrimal caniculi into the lacrimal sac, which empties into the nasal cavity through the nasolacrimal duct. **(1 point)**

Sense of smell is due to presence of olfactory receptors in the nasal cavity. **(1 point)**

If medications are placed into the eyes, some may drain into the nasal cavity, which may stimulate the olfactory receptors of the olfactory organ. **(1 point)**

The sense of taste is due to the presence of taste receptors in the mouth and pharynx. **(1 point)**

The ability to "taste" the medication is due to the fluid draining from the nasal cavity into the pharynx stimulating taste receptors. **(1 point)**