MT HOSA Forensic Science

Event Category: Teamwork

Dress Code: Official HOSA uniform or business professional attire	**Round One:** 50 Q test (60 minutes)	**Digital Upload:** No
Team Event: 2 competitors per team	**Round Two:** Case Study Analysis (40 minutes)	

Event Summary

Forensic Science allows HOSA members to work as a team to apply their knowledge and skills in creating a solution to a forensic science-related problem. This competitive event consists of two rounds, and each team consists of two (2) people. Round One is a written test that evaluates the team's understanding of forensic science. The test score from Round One will be used to qualify the team for Round Two. In Round Two, teams will be given a case study to analyze, including physical evidence and written information such as police reports and an autopsy. Teams may have time to view a "crime scene" and/or review resources to write their conclusions with supporting evidence. This event aims to inspire members to be proactive future health professionals and critically examine elements of a forensic case.

CAUTION

The content and pictures in the suggested resources are graphic in nature and may be considered offensive by some. HOSA Advisors should seek administrative and parental approval before allowing HOSA members to participate in this event. This event is intended for advanced level HOSA members who have already completed one or more courses in Medical Terminology and Anatomy & Physiology.

General Event Information

Official References	The references below are used in the development of the test questions. ● Bertino, A., Bertino, P. (Latest Ed) *Forensic Science Fundamentals*. National Geographic Learning/South-Western Cengage Learning. ● Bell, S. (Latest Ed). *Forensic Science*. Taylor & Francis Group/CRC Press. Optional References: Competitors should have a strong background in Medical Terminology, Anatomy and Physiology, and Pathophysiology in order to best respond to the Round Two case study. The following resources are recommended study materials to assist competitors with these subjects. Round One test questions are NOT taken from these resources: ● Simmers, L., Simmers-Nartker, K., Simmers-Kobelak, S, and Morris, L. *DHO: Health Science.* Cengage Learning, Latest edition. ● Ehrlich, Ann. Medical Terminology for Health Professions, Cengage Learning. Latest *Edition.* ● Frazier. *Essentials of Human Diseases and Conditions*. Elsevier, Latest edition.

The expectation is that competitors read and are aware of all the content within these guidelines and associated links. Successful competitors will study all links for the detailed information.

ROUND ONE- Test

Test Instructions	The written test will consist of 50 multiple-choice items in a maximum of 60 minutes. See test instructions here. The team test score average from Round One will be used to qualify the team for the Round Two case study analysis.
Written Test Plan	The test plan for the Forensic Science Test is: ● Forensic History and Careers - 10% ● Crime Scene and Death Investigation - 20% ● Forensic Toxicology and Pharmacology - 20% ● Forensic Anthropology - 10% ● Forensic Entomology - 10% ● Identification of Blood, Bloodstains, Biological Fluids and Stains - 10% ● Techniques of DNA Analysis - 10% ● Forensic Psychology and Psychiatry - 10%
Sample Test Questions	1. What is the term for a conscious and deliberate attempt to minimize or deny symptoms of a mental disorder? (Bell pp 318) A. Deception B. Malingering **C. Dissimulation** D. Incompetence 2. Where are blowfly eggs usually found on a dead body? (Bell pp 122) **A. Close to a wound or natural orifice** B. Under any covering such as clothing, leaves, etc. C. On the chest or in a hairy body area D. Under the body close to the ground 3. When a victim drowns in freshwater, what term describes the massive destruction of RBC's? (Bertino pp 500) A. Pneumothorax B. Asphyxia C. Sickling of RBC's **D. Autolysis**

ROUND TWO- Case Study Analysis

1. The top teams from Round One will advance to Round Two. The number of advancing teams will be determined by the scores obtained in Round One and the space and time available for Round Two.

2. In Round Two, each team will be asked to analyze the same case study. The case study is a secret problem that is not disclosed until the event begins. Professional ethics demand that competitors DO NOT discuss or reveal the secret topic until after the event has concluded. Competitors who violate this ethical standard will be penalized per the GRRs

3. No pre-printed or recorded materials/notes may be brought to the competition. Competitors will be provided with index cards, or paper, for taking notes. They may use these notes throughout the event but will submit them to event personnel upon finishing their written conclusion. **Teams must bring pencils, and each team member has the option to bring one highlighter to the competition.**

4. Case Study Analysis Options:
    a. Physical scene with props, evidence or witnesses/bystanders
    b. Scene presented in a written format
    c. Scene presented in a digital format

**In some cases, the event may have multiple options for competitors to analyze, such as a written format in addition to a digital format. Instructions will be given to competitors on-site.

5. One copy of the written information will be provided per team, including the police report, autopsy, etc., if applicable. If provided, team members will be allowed to take notes on these documents and use them to help develop their written conclusion. These will be returned to event personnel at the conclusion of this event. Team members will be allowed to take notes on any provided documents and use them to help develop their written conclusion.

6. Competitors will identify the time of death range, immediate cause of death, manner of death, other conditions contributing to cause of death (if applicable) in addition to evidence (pertinent observations and facts) about the case that explains why teams came to the conclusions they reached. Teams will write up their conclusions following the report template below and submit this per the instructions given by event personnel.

7. **Competitors will have a total of 40 minutes to analyze and write their conclusion.**

8. **Time Remaining Announcements:** Five (5) minutes will be announced to submit the written conclusion. There will be no additional time remaining announcements.

Final Scoring

1. The team's test score average will be added to the case study analysis score to determine the final results.

2. In the case of a tie, the highest averaged test score will be used to determine the final rank.

Future Opportunities

The HOSA Scholarship program has funding available for HOSA members who have an interest in various health careers! The application process begins January 1, 2027, and can be found here: https://hosa.org/scholarships/.

Graduating from high school or completing your postsecondary/collegiate program does not mean your HOSA journey has to end. As a HOSA member, you are eligible to become a HOSA Lifetime Alumni Member- a free and valuable opportunity to remain connected, give back, and help to shape the future of the organization. Learn more and sign up at hosa.org/alumni.

Forensic Science

Case Study Analysis Written Conclusion

Team #:_____ **Team Member's Last Names:**_____ **Division:** _____SS,_____PS/C

CASE STUDY ANALYSIS OPINION

Time of Death Range:

Immediate Cause of Death:

Manner of Death:

Other conditions contributing to the immediate cause of death, if applicable:

Evidence to support opinion:

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Forensic Science

Round Two Case Study Analysis Rubric

Team #:_____ **Division:** _____SS,_____PS/C **Judge's Signature:**_____

If the submission is NOT uploaded as a PDF file, judges are not to score the submission.

Items Evaluated	EXCELLENT 10 points	GOOD 8 points	AVERAGE 6 points	FAIR 4 points	POOR 0 points	JUDGE SCORE
1. Time of Death Range	Indicates the date and approximate time of death correctly.	N/A	Indicates a close approximation of the correct date and time of death.	N/A	Date or time is not close to the actual date or time of death or is missing altogether.	
2. Immediate Cause of Death	Accurately identifies the medical cause of death.	N/A	A partial identification of the medical cause of death is included.	N/A	The response does not reflect an accurate cause of death.	
3. Manner of Death: -Natural, Accident, Suicide, Homicide, Undeteremined	Accurately identifies the manner of death as one of the five listed.	N/A	N/A	N/A	Does not accurately identify the-manner of death as one of the five listed.	
4. Other conditions, as applicable	Team includes most specific and relevant factors contributing to the death but not considered the immediate cause.	N/A	Team includes only some of the relevant factors contributing to the death but not considered the immediate cause.	N/A	Team is not able to identify contributing factors to the death.	
5. EVIDENCE-Connects Evidence to the Conclusions	Writing includes numerous pieces of evidence that completely supports the conclusions with logical details, facts, or examples.	N/A	Writing includes some pieces of evidence that partially supports the conclusions.	N/A	Writing does not include any pieces of evidence to support the conclusions.	
6. EVIDENCE-Application of Knowledge	Team draws numerous accurate conclusions using their knowledge of human anatomy and physiology and forensic science	N/A	Team draws several accurate conclusions using their knowledge of human anatomy and physiology and forensic science	N/A	Team draws very few accurate conclusions using their knowledge of human anatomy and physiology and forensic science	
7. EVIDENCE-Concise, clear and logical	Physical evidence of this case was explained in a clear, concise and logical manner.	Physical evidence was explained in a way that was mostly clear, concise and logical.	The evidence was explained moderately clear, concise, and logically.	Some of the evidence was explained in a clear and logical manner.	The evidence was not explained in a clear or concise manner and information was not logical.	
8. Grammar, Mechanics, and Spelling	Errors in grammar, spelling, punctuation, and capitalization are minimal and not distracting. (0-1 errors).	Minimal errors are found (1-2 errors) which do not detract from the general flow of the written conclusion.	4 errors were found, which detract from the overall flow of the written conclusion.	There are 5 or more errors which detract from the overall meaning and flow of the written conclusion.	Errors are glaring, and the written conclusion is difficult to read and or understand.	
					TOTAL POINTS (80)	

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