

Environmental Health & Safety

New Mexico State University

MSC 3578, Box 30001

Las Cruces, NM 88003-8001

Score \_\_\_\_\_\_\_\_\_\_\_

 (For EH&S use only)

**BASIC LASER SAFETY TRAINING EXAM**

**Instructions:** To receive credit, complete the following exam. Please email the exam to the Radiation Safety Manager at dschoep@nmsu.edu, or you may send the exam via campus mail to Radiation Safety, MSC 3578. Please check [Training Central](https://trainingcentral.nmsu.edu/Saba/Web/Main/) for your score. **To pass the exam you must score 80% or higher**. This is an “open-book” exam meaning you can use any reference materials you choose including the NMSU Radiation Safety Manual.

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| --- | --- |
| **Name:** Click here to enter text. | **Email:** Click here to enter text. |
| **Department:** Click here to enter text. | **Date:** Click here to enter text. |
| **AGGIE ID #:** Click here to enter text. | **Laser Owner / PI:** Click here to enter text. |

|  |
| --- |
| 1. Lasers operate in what range of the electromagnetic spectrum?
 |
|[ ]  **a.** | UV |
|[ ]  **b.** | IR |
|[ ]  **c.** | Visible |
|[ ]  **d.** | a & b only |
|[ ]  **e.** | All of the above |
|[ ]  **f.** | None of the above |
|  |
| 1. Laser light has which of the following characteristics:
 |
|[ ]  **a.** | Directional |
|[ ]  **b.** | Coherent |
|[ ]  **c.** | Monochromatic |
|[ ]  **d.** | All of the above |
|[ ]  **e.** | None of the above |
|  |
| 1. Define MPE:
 |
|   |
|  |
| 1. Define NHZ:
 |
|   |
|  |
| 1. Which of the following would be considered an engineering control?
 |
|[ ]  **a.** | SOP |
|[ ]  **b.** | Beam block |
|[ ]  **c.** | Laser curtain |
|[ ]  **d.** | Door interlock |
|[ ]  **e.** | b, c & d |
|[ ]  **f.** | All of the above |
| 6. All laser safety eyewear is the same. |
|[ ]  **a.** | True |
|[ ]  **b.** | False |
|  |
| 1. Define OD:
 |
|   |
|  |
| 8. Which part of the laser spectrum produces an invisible retinal hazard and has the potential to cause a serious eye injury? |
|[ ]  **a.** | UV |
|[ ]  **b.** | IR |
|[ ]  **c.** | Visible |
|[ ]  **d.** | Near IR |
|[ ]  **e.** | b, c & d |
|[ ]  **f.** | All the above |
|  |
| 9. The acronym LASER stands for: |
|   |
|  |
| 10. The basic components of all lasers include an Active Medium, Excitation Mechanism and an Optical Resonator. |
|[ ]  **a.** | True |
|[ ]  **b.** | False |
|  |
| 11. Who has the primary responsibility for laser safety whenever a Class 3B or Class 4 laser is operated? |
|[ ]  **a.** | Laser safety officer |
|[ ]  **b.** | Principal Investigator (PI) |
|[ ]  **c.** | Person operating the laser |
|[ ]  **d.** | Chemical hygiene officer |
|[ ]  **e.** | None of the above |
|[ ]  **f.** | All the above |
|  |
| 12. All laser safety eyewear must be labeled with the optical density and wavelength for which it provides protection. |
|[ ]  **a.** | True |
|[ ]  **b.** | False |
|  |
| 13. Spectator safety is primarily the responsibility of the: |
|[ ]  **a.** | Laser safety officer |
|[ ]  **b.** | Principal Investigator (PI) |
|[ ]  **c.** | Person operating the laser |
|[ ]  **d.** | Chemical hygiene officer |
|[ ]  **e.** | None of the above |
|[ ]  **f.** | All the above  |
|  |
| 14. A laser controlled area must be established wherever Class 3B or Class 4 lasers are used with the beam exposed. |
|[ ]  **a.** | True |
|[ ]  **b.** | False |
|  |
| 15. Which class of laser is an eye hazard for intrabeam viewing but not usually a hazard when diffuse reflections are viewed? |
|[ ]  **a.** | Class 1 |
|[ ]  **b.** | Class 2 |
|[ ]  **c.** | Class 3R |
|[ ]  **d.** | Class 3B |
|[ ]  **e.** | Class 4 |
|  |
| 16. Which part of the laser spectrum has the potential for causing photochemical damage to both eyes and skin? |
|[ ]  **a.** | UV |
|[ ]  **b.** | IR |
|[ ]  **c.** | Visible |
|[ ]  **d.** | Near IR |
|[ ]  **e.** | b, c & d |
|[ ]  **f.** | All the above |
|  |
| 17. In general, continuous wave (CW) lasers are more dangerous than pulsed lasers because of the high power produced from a CW beam? |
|[ ]  **a.** | True |
|[ ]  **b.** | False |
|  |
| 18. Viewing a specular reflection of a beam is as hazardous as intrabeam viewing? |
|[ ]  **a.** | True |
|[ ]  **b.** | False |
|  |
| 19. Which of the following are potential non-beam hazards associated lasers? |
|[ ]  **a.** | Process radiation |
|[ ]  **b.** | Laser generated air contaminants |
|[ ]  **c.** | Electrical hazards |
|[ ]  **d.** | Mechanical hazards |
|[ ]  **e.** | c & d |
|[ ]  **f.** | All of the above |
|  |
| 20. Which class of laser is considered safe as long as the user knows not to overcome the natural aversion response (blinking) and stare directly into the beam? |
|[ ]  **a.** | Class 1 |
|[ ]  **b.** | Class 2 |
|[ ]  **c.** | Class 3R |
|[ ]  **d.** | Class 3B |
|[ ]  **e.** | Class 4 |
|  |
| 21. Laser light is a type of: |
|[ ]  **a.** | Ionizing radiation |
|[ ]  **b.** | Non-ionizing radiation |
|  |
| 22. Written & approved SOPs and Beam Alignment Procedures are recommended for all open-beam work with Class 3B and required for all work with Class 4 lasers |
|[ ]  **a.** | True |
|[ ]  **b.** | False |
|  |