

Answer Key to
Entering Student Assessment for
Mathematics for Photonics Education



© 2003 CORD

Printed March 2003

This material is based upon work supported by the National Science Foundation under Grant No. 0202424.

Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

A message to the teacher regarding the use of “Entering Student Assessment for *Mathematics for Photonics Education*”

This assessment instrument is not an achievement test, a timed-test, or an IQ test. It is an assessment test. It has been developed to provide you and your students with an indication of their mathematical readiness as they enter a photonics technician education program. The eleven topical areas covered and the 48 questions posed are based on mathematical skills that photonics technicians need to succeed in their courses. Allow students ample time to complete the test.

We feel that the results of the test should provide both you and your students with a general estimate of their mathematical preparedness in the following ways:

- If a student scores in the 0–50% range, mathematics review is needed.
- If a student scores in the 70–100% range, he or she is prepared to move normally into the program.
- If a student scores in the 50–70% range, analysis of performance in each of the eleven areas may disclose weakness in only certain areas. Appropriate remediation can then be planned to shore up understanding in those areas.

In any event, the material developed in the text titled *Mathematics for Photonics Education* can be used to enhance overall knowledge or remediate specific shortfalls in essential mathematic skills as indicated by the assessment instrument.

**ENTERING STUDENT ASSESSMENT FOR
MATHEMATICS FOR *PHOTONICS EDUCATION***

Answer Key

- | | | | | | |
|-----|------------------|-----|------------------|-----|------------------|
| 1. | <u> a </u> | 17. | <u> b </u> | 33. | <u> b </u> |
| 2. | <u> c </u> | 18. | <u> b </u> | 34. | <u> a </u> |
| 3. | <u> e </u> | 19. | <u> b </u> | 35. | <u> d </u> |
| 4. | <u> d </u> | 20. | <u> c </u> | 36. | <u> a </u> |
| 5. | <u> a </u> | 21. | <u> c </u> | 37. | <u> b </u> |
| 6. | <u> d </u> | 22. | <u> a </u> | 38. | <u> d </u> |
| 7. | <u> b </u> | 23. | <u> d </u> | 39. | <u> c </u> |
| 8. | <u> c </u> | 24. | <u> d </u> | 40. | <u> c </u> |
| 9. | <u> d </u> | 25. | <u> a </u> | 41. | <u> c </u> |
| 10. | <u> c </u> | 26. | <u> c </u> | 42. | <u> b </u> |
| 11. | <u> d </u> | 27. | <u> d </u> | 43. | <u> b </u> |
| 12. | <u> d </u> | 28. | <u> c </u> | 44. | <u> b </u> |
| 13. | <u> a </u> | 29. | <u> c </u> | 45. | <u> b </u> |
| 14. | <u> d </u> | 30. | <u> c </u> | 46. | <u> b </u> |
| 15. | <u> e </u> | 31. | <u> c </u> | 47. | <u> d </u> |
| 16. | <u> c </u> | 32. | <u> d </u> | 48. | <u> a </u> |