

Please check whether you have got the right question paper.

- N.B: **1) Question.No.1 is compulsory.**
2) Answer Any 3 out of remaining **5** questions.
3) Figures to the right indicate full marks.
4) Draw neat diagrams wherever necessary

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| 1. | a) Explain the Laser Cavity | 05 |
| | b) How to obtain sustainable lasing action? | 05 |
| | c) Write the optical properties of Optical Fiber? | 05 |
| | d) Explain the Laser Components | 05 |
| 2. | a) Explain the construction and working of Nd-YAG Laser along with its energy level diagram, What are its medical applications? | 10 |
| | b) Explain the Optical fiber fabrication techniques, how is OVPO different from VPAD? Explain OVPO in 10 detail. | 10 |
| 3. | a) Explain the primary element of Fiber Optic System | 04 |
| | b) Explain in detail the Interaction of Laser with matter | 08 |
| | c) Explain the Modes in Laser | 08 |
| 4. | a) How do you define Gain of Laser Medium? Obtain the expression for Gain Coefficient | 10 |
| | b) Draw and explain the flow diagram for Laser Angioplasty. | 10 |
| 5. | a) Explain in detail Plasma Activated Chemical Vapor Deposition. | 08 |
| | b) Explain the anatomical structure of a flexible endoscope and label all the parts, Which are the accessories come along with a flexible endoscope? Give their applications. | 12 |

Write short notes on **(Any four)**

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| | a) Endoscopic Laser Photocoagulation | |
| | b) Optical fiber Splices | |
| | c) Role of Laser safety officer | |
| | d) Properties of Laser | |
| | e) Losses in Optical Fiber | |
