

**Avinashilingam Institute for Home Science and Higher Education for Women
Coimbatore-641043.**

Master's Degree Examination – November - 2017

First Semester

Class : I PG
Major : PHYSICS

Time: 3 hours
Max. Marks: 60

17MPHC03- Laser and Spectroscopy

Part A

10 x 1/2 = 5

Choose the correct answer

1. A Laser emits light in ----- direction.
a. only one b. all c. different d. multiple
2. It is difficult to achieve laser action in ----- frequency ranges.
a. low b. zero c. high d. medium
3. In three level pumping scheme, the light output is a ----- output.
a. continuous b. pulsed c. inverted d. analog
4. The other name for LASER is -----.
a. MASER b. LASOR c. LASAR d. LOSER
5. The Oblate molecules have -----.
a. $I_a = I_b < I_c$ b. $I_a = I_b = I_c$ c. $I_a \neq I_b \neq I_c$ d. $I_a \neq I_b = I_c$
6. The example for the asymmetric top molecule is -----
a. NH_3 b. CH_4 c. H_2O d. BCl_3
7. A hot band will ----- in intensity as the temperature of the sample is increased.
a. decrease b. increase c. be constant d. be zero
8. A molecule of n atoms has ----- degrees of freedom.
a. 2n b. 4n c. n d. 3n
9. If the virtual state of the system coincides with a real state of the system, it will lead to ----- effect.
a. Raman b. Laser Raman c. Resonance Raman d. Stark
10. The first Raman Spectrum of an organic compound was observed using ----- as the source.
a. moon b. Sun c. Klystron d. human eye

