Lecture 7. Solutions to Problems.

1. (i) $J^\pi = 0^+$, 2^+, 4^+, 6^+, 8^+;
   (ii) $J^\pi = 0^-$, $(1^-)^2$, $(2^-)^2$, $(3^-)^2$, $(4^-)^2$, $(5^-)^2$, $(6^-)^2$, $(7^-)^2$, $(8^-)^2$, 9^-;
   (iii) $J^\pi = 0^+$, 2^+, 4^+, 6^+, 8^+.

2. See formula for $\langle j_1 j_2; JT|V|j_3 j_4; JT\rangle$ of the MSDI on the transparency 14 of this Lecture.

3. $E_1(3^+) = -6.4447$ MeV, $E_2(3^+) = -1.6158$ MeV.

4. $\Delta E = 420$ keV.

5. $E(0_2^+) = 2.644$ MeV.