

# **EP-1108 Modern Physics**

## **Assignment 5**

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Due date: Friday, 19 February 2021

1. What will happen if we put a spin-1 particle inside the 3D potential well? Find out the density of states for the system. [5]
2. Find out the Fermi energy for Na atom, with  $n = 0.97$  g/cc. [5]
3. You are performing a Stern-Gerlach experiment for a spin-2 particle, with the magnetic field of the apparatus along  $z$ -axis. What is the expected outcome? Explain diagrammatically. [5]