Name:________________________________ Roll No:____________

Course: BSO 203 Instructor: S. Raychaudhuri

SESSION 2002-2003, SEMESTER I

QUIZ VII

1. Given a one-dimensional potential

$$V(x) = -V_0 \; \theta(|x| - a)\theta(2a - |x|) \; .$$

Answer the following questions briefly, giving appropriate reasons.

(a) Sketch the potential, marking important points on your graph.

(b) For what values of energy will you get bound states?

(c) Will the energy eigenstates have definite parity?

(d) Sketch the shape of the ground state wavefunction.

(e) Will you see scattering from this potential for $E > 0$? **(5×2)**