

# UNIVERSITY OF HYDERABAD

## School of Physics

Jan 2010 - Apr 2010  
M.Sc. II-Semester

Quantum Mechanics-I

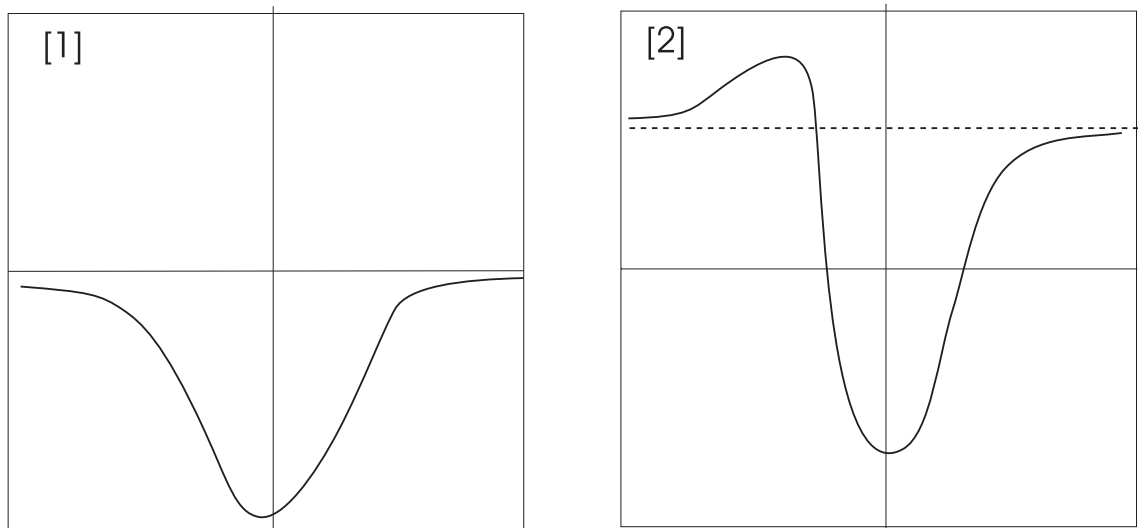
Time : 1hr  
MM : 20

### Tutorial-VIII : Potential Problems in One Dimension

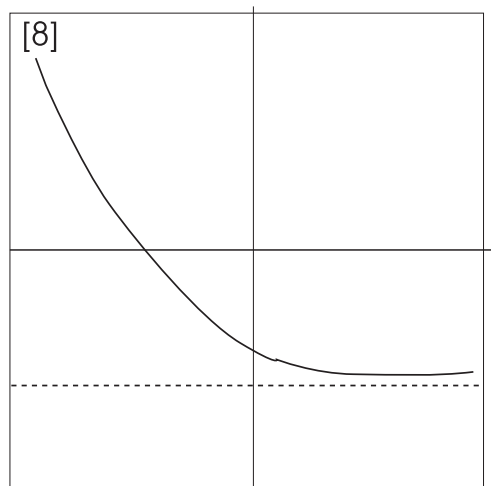
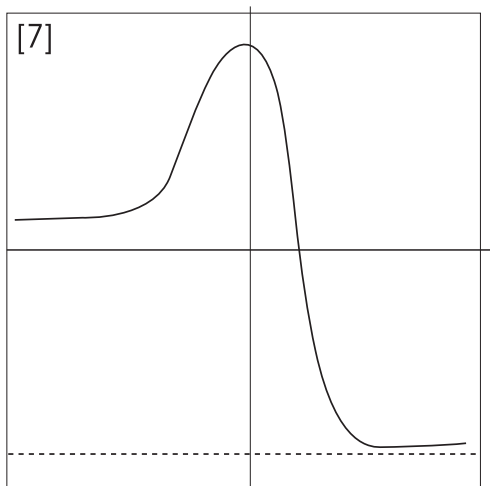
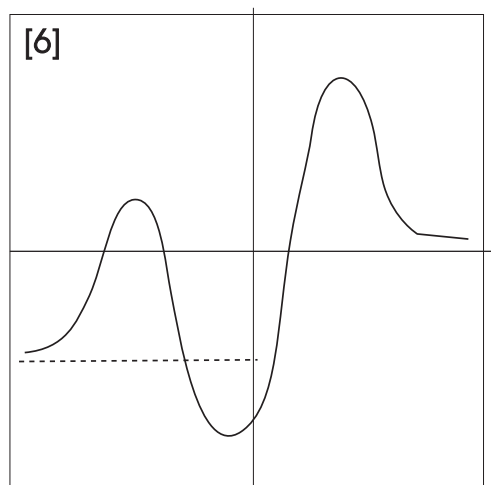
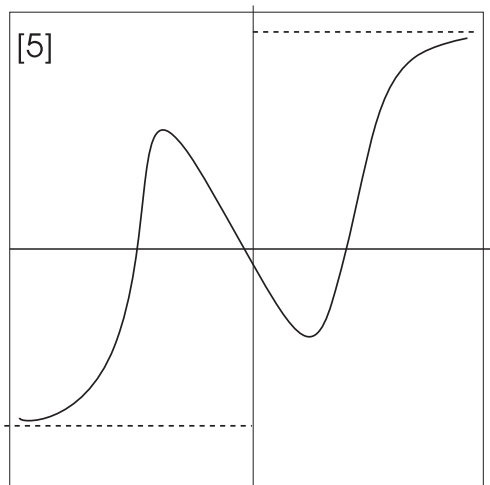
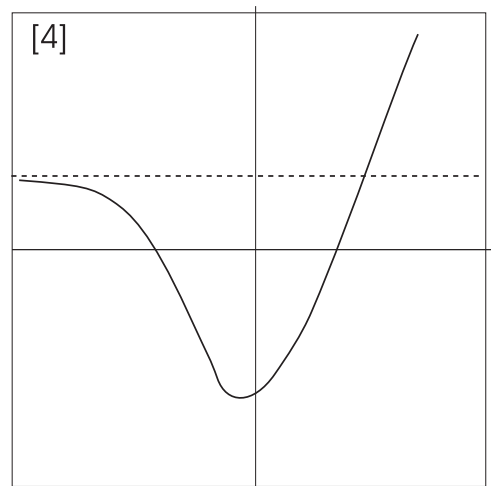
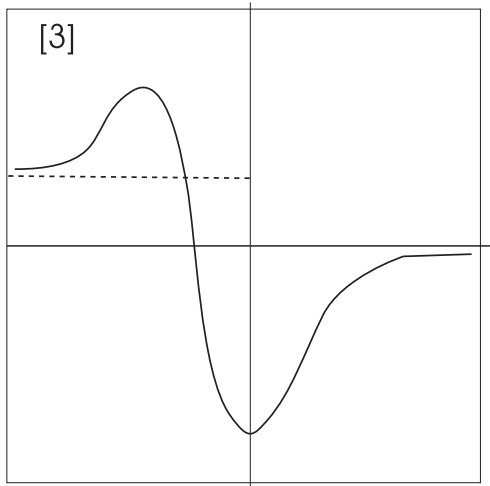
[1] For each of the potentials drawn below, Fig.?? and Fig.?? find the ranges of energy values as specified in statements (a),(b),(c),(d). Give short reasons for your answers and write your answers in a tabular form given below.

- (a) The range of allowed energy eigenvalues
- (b) The range of energies between which the bound states can be found.
- (c) The range of energies for which the energy eigenvalue will be continuous and non-degenerate.
- (d) Range for which the energy eigenvalues are continuous and doubly degenerate.

Potential	(a)	(b)	(c)	(d)
1				
2				
3				
4				



**Fig. 1** Potential Wells for Q.1



**Fig. 2** Potential Wells for Q.1