Herbs, shrubs or trees. Leaves usually simple and alternate, exstipulate, entire to lobed. Flowers often showy, solitary or in racemes, spikes, panicles, cymes or corymbss, bisexual (unisexual in *Withania* sp.), regular (± irregular in *Nicotiana* and *Hyoscyamus*), ebracteate. Calyx (3-)5 (-7)-lobed, cupular, campanulate or tubular, usually persistent and enlarged in fruit. Corolla rotate, campanulate, salver or trumpet-shaped; lobes 5(-10), usually equal; plicate or valvate in bud. Stamens (4-)5, epipetalous, alternating with the corolla lobes, sometimes didynamous and unequal, attached to the base of the corolla tube or higher up; anthers sometimes adnate to one another and cone-like, dehiscing longitudinally or by apical pores. Ovary superior, oblique, 2-4(-5)-locular; placentation axile. Fruit a many-seeded capsule or berry. Seeds compressed, reniform to discoid, testa smooth or variously ornamented; embryo curved or straight.