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The review article pertains to covering the developments of the synthesis and studies of septanoside sugars. Seven-membered ring sugars have long been thought as a possible source to expand the scope of sugar structures in general and, as a result, septanoses are known decades ago as one of the equilibrium forms of, for example, pyranoses. Success have been quite considerable in 1970's and 80's, as it was possible to isolate septanoses and septanosides for further structural studies. However, the advancements have taken a different course wherein chemical syntheses of septanoses from designed synthons are thought as a compelling requirement, in order to match with the emerging oxepane structure-containing natural products. A number of ingenious ways to prepare septanoses in a designed manner have emerged during last couple of decades. The advancements are ever increasing since then, not only on the synthesis, but also the requirement to identify the functional values of septanoses in varied types of studies. Whereas the functional studies are still at its infancy, chemical synthesis have reached a level of maturity and, it is now possible to prepare septanoses in ways that one might want. This review article is thus based largely on the advancements in the synthesis of septanoses as developed during last few years to a decade. A historical development of this area of research is provided in beginning of the review. The compilation covers also the structural aspects, as evidenced through solid state and solution phase studies. Functional studies of septanoses are far and few, yet a mention of the known instances are given. Overall the review is compiled in such a manner as to arise not only a broad understanding of this field of research, but also the challenges and opportunity that wait for future course of development.