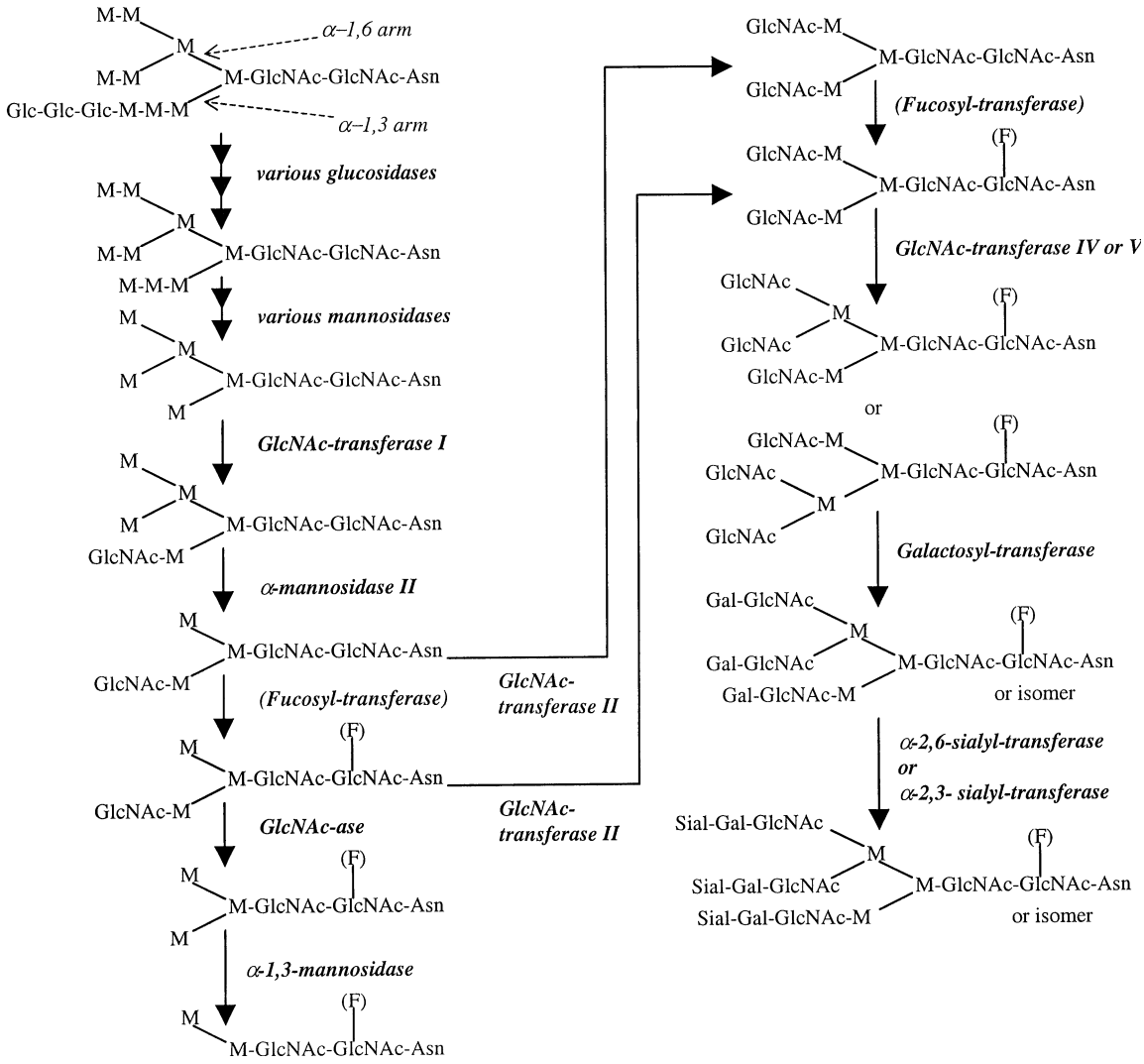

Figure 4.8. Example of a N-linked glycosylation pathway (Glc = glucose, M = mannose, GlcNAc = N-acetylglucosamine, F = fucose, Gal = galactose, Sial = sialic acid). The oligosaccharide side-chain is bound to an asparagine (Asn) of the protein. The upper arm represents the α-1,6 arm and the lower one the α-1,3 arm. The parentheses refer to an optional fucosylation. The GlcNAc-ase step is important in insect cells, but not mammalian cells. (Courtesy of C. Joosten.)

display a range of glycoforms; a single form is not observed. A simple sequence of three amino acids, of which asparagine must be one, is required for attachment of N-linked sugars and amino sugars. The sequence at the attachment site is Asn-Xaa-Ser/Thr, where Xaa is any amino acid and the third amino acid in the sequence must be serine or threonine. The process of N-linked glycosylation begins in the ER, where a preformed branched