Q6. A step index fiber has core diameter 29x10-6m . The refractive indices of the core and the cladding are 1.52 and 1.5189 resp. If the light of wavelength 1.3µm is transmitted through the fiber, determine [a]Normalized frequency of the fiber. [b] The number of modes fiber will support.

**Given :-** d=29x10-6m; ; µ1= 1.52; µ2=1.5189.

**Formula :-** V=; Nm=

**Solution:-** V= x = 4.049

Nm= = = 8.197

**Ans:- Normalized frequency is 4.049 and the number of modes is 8.**