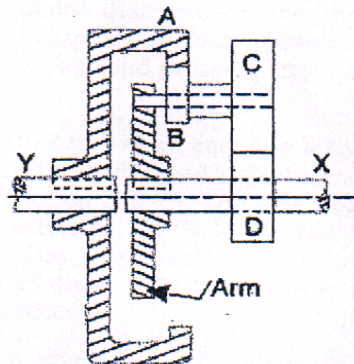


TOM-2

Q.P. Code : 14809

3

- Q6 A. A Porter governor has equal arms each 250 mm long and pivoted on the axis of the rotation. Each ball has a mass of 5 kg and the mass of the central load on the sleeve is 25 kg. The radius of rotation of the ball is 150 mm when the governor begins to lift and 200 mm when the governor is at maximum speed. Find the range of the speed, sleeve lift, governor effort and power of the governor in the following cases :- (10)
- i) when the friction at the sleeve is neglected, and
 - ii) when the friction at the sleeve is equivalent to 10 N.
- B. An over drive for a vehicle consists of an epicyclic gear train as shown in the figure, with compound planets B-C. B has 15 teeth and meshes with an annulus A which has 60 teeth. C has 20 teeth and meshes with the sunwheel D which is fixed. The annulus is keyed to the propeller shaft Y which rotates at 740 rad/sec. The spider which carries the pins upon which the planets revolve, is driven directly from main gear box by shaft X, this shaft being relatively free to rotate with respect to wheel D. Find the speed of shaft X, when all the teeth have the same module. (10)



GN-Con. 5632-14.