

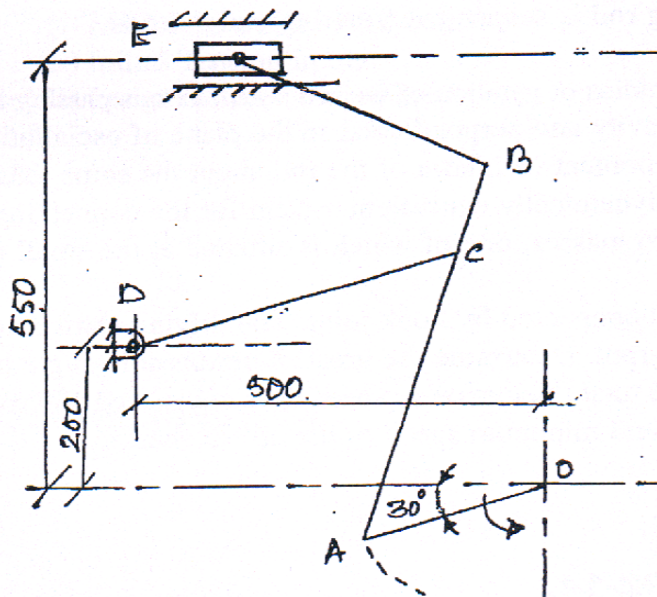
(OLD COURSE)**QP Code :14333**

(3 Hours)

[Total Marks : 100

- N. B. :** (1) Question No. 1 is **compulsory**.
 (2) Answer any **four** out of remaining **six** questions.
 (3) Assume suitable data wherever required.

1. Answer any **four** of the following questions :- 20
- Explain Peaucellier's mechanism with a neat sketch.
 - Explain the term Inversion. Describe the possible inversions of a four bar chain.
 - Explain the term "slip and creep" as referred to belt drive. Which are the factors those influence slip & creep.
 - Explain Law of gearing with a neat sketch.
 - Explain Grubler's criterion and using the same, deduce minimum number of links required to form a mechanism.
2. (a) Draw a neat sketch of a "Tchebicheff" mechanism and prove that the lengths of the links must be in the ratio of 1:2:2.5 for a point on the coupler to trace an approximate straight line. 8
- (b) Fig. shows the mechanism of a radial valve gear. Crank OA rotates uniformly at 150 rpm and is pinned at A to rod AB. Point C is guided in the circular path with D as centre and DC as radius
 Dimensions of various links are :-
 OA = 150 mm; AB = 550 mm; AC = 450 mm; DC = 500 mm and BE = 350 mm.
 Determine the velocity of the slider at E by
- Relative velocity method 6
 - Instantaneous centre method. 6

**[TURN OVER**