

- Q.4** (a) What are the standard tooth profiles? 03
(b) What is interference and undercutting in gear? 04
(c) Two involute gears of pressure angle are rotating in mesh. The speed of smallest gear is 1400 rpm. The number of teeth on pinion is 20 and gear ratio is 2. If the addendum of pinion and wheel is standard and equal to one module and module is 5mm. Consider pressure angle as 20. 07
Find:
(i) length of arc of contact.
(ii) velocity of sliding at the point of contact.
- Q.5** (a) What is cam and follower? 03
(b) Roller follower is more preferable to that of knife edged follower .why? 04
(c) Define the following terms as applied to cam with neat figure. (i) Base circle (ii) Pitch circle, (iii) Pressure angle, (iv) stroke of the follower. (v) Prime circle. 07

OR

- Q.5** (a) What are the types of motion of the follower? 03
(b) With the help of neat sketches explain the types of cams and followers 04
(c) Draw a cam profile for a given data: 07
1. Outstroke during 60° of cam rotation
2. Dwell for the next 45° of cam rotation
3. Return stroke during next 60° of cam rotation and
4. Dwell for the remaining of cam rotation
The stroke of follower is 50mm and the minimum radius of the cam is 40mm. The follower moves with uniform velocity during both the outstroke and return strokes. The follower is of knife edge type. Draw the profile of the cam when the axis of the follower is passes through the axis of cam shaft.
