TY-Mech

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Mid Semester Examination – Sept./Oct. 2019

Course: B. Tech in __TY Mech –I **Sem: I**

Subject Name: Theory Of Machine -II **Subject Code: BTMEC 504**

Max Marks: 20 **Date:- 26/09/2019** **Duration:- 1 Hr.**

Instructions to the Students:

1. All questions are compulsory
2. Assume suitable data, if necessary

		(Level/CO)	Marks
Q. 1	**Solve the following**		**6**
	1. Define the centrifugal tension in a belt	1	
	2. Explain the 'initial tension in a belt'.	1	
	3. Define the pressure angle of gears	2	
	4. Explain the advantages of Involute gears	2	
	5.Compare the Spur, Helical & Herringbone gear	2	
	6. What are the applications of gear train	2	
Q.2	**Solve Any Two of the following.**		**3 X 2**
(A)	Explain the phenomena of 'slip' and 'creep' in a belt drive.	1	
(B)	Explain the phenomenon interference and undercutting for involute gears?	2	
(C)	Explain the simple and compound gear train	2	
Q. 3	**Solve Any One of the following.**		**8**
(A)	Two mating involute spur gear of 20° pressure angle have a gear ratio of 2. The number of teeth on the pinion is 20 and its speed is 250 r.p.m. The module pitch of the teeth is 12 mm. If the addendum on each wheel is such that the path of approach and the path of recess on each side are half the maximum possible length, find : 1. the addendum for pinion and gear wheel ; 2. the length of the arc of contact ; and 3. the maximum velocity of sliding during approach and recess. Assume pinion to be the driver.	2	
(B)	In a spiral gear drive connecting two shafts, the approximate centre distance is 400 mm and the speed ratio = 3. The angle between the two shafts is 50° and the normal pitch is 18 mm. The spiral angle for the driving and driven wheels are equal. Find : 1. Number of teeth on each wheel, 2. Exact centre distance, and 3. Efficiency of the drive, if friction angle = 6°.	2	

***** End *****