



# AJEENKYA

## D Y PATIL UNIVERSITY

### End Term Examination (December 2019)

**School:** School of Engineering

**Program:** BTech.Mechatronics.

**Course:** Theory of machines

**Course Code:** MTE302

**Semester:** V

**Max Marks:** 40

**Duration (mins) :** 90

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	All questions are compulsory	Marks
Q 1	Sketch and explain inversions of double slider crank chain.	[6]
Q 2{A}	Explain function of governor and classify governor.	[4]
Q 2{B}	Sketch and explain Centrifugal governor and explain terms used in it.	[6]
Q 3	A pair of gears, having 40 and 30 teeth respectively is of $25^\circ$ involute form. The addendum length is 5mm and module pitch is 2.5 mm. If the smaller wheel is driver and rotates at 1500 rpm, find the velocity of sliding at point of engagement and at point of disengagement	[6]
Q 4	Four masses A, B, C and D are attached to a shaft and revolve in same plane. The masses are 12 kg, 10 kg, 18 kg and 15 kg respectively and their radii of rotation are 40mm, 50 mm, 60 mm and 30 mm. The angular position of masses B,C,D are $60^\circ$ , $135^\circ$ and $270^\circ$ respectively from mass A. Find magnitude and position of the balancing mass at a radius of 100 mm.	[8]
Q 5	State and explain types of vibration.	[5]
Q 6	Write a short note on gear nomenclature.	[5]

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