APJ ABDULKALAM TECHNOLOGICAL UNIVERSITY
08 PALAKKAD CLUSTER

Q. P. Code: MD0819022-I **(Pages: 2)** **Name: .....**

Reg. No:.....

SECOND SEMESTER M.TECH. DEGREE EXAMINATION APRIL 2019

Branch: Mechanical Engineering **Specialization: Machine Design**

08ME6022: ADVANCED MECHANISMS DESIGN AND SIMULATION

Time:3 hours **Max. marks: 60**

Answer all six questions.

Modules 1 to 6: Part 'a' of each question is compulsory and answer either part 'b' or part 'c' of each question.

(Add any other instruction specific to course here like the use of IS codes/design tables etc.)

Q.no.	Module 1	Marks
1.a	Write a short note on Geneva mechanism	**3**
	Answer b or c	
b	Discuss about gross motion concept	**6**
c	Explain Grashoff condition and Grubler's criterion for determining degree of freedom of mechanism.	**6**

Q.no.	Module 2	Marks
2.a	Briefly discuss about kinematic position analysis	**3**
	Answer b or c	
b	Explain the various inversions involved in a four bar chain mechanism	**6**
c	Differentiate between slider crank mechanism and inverted slider crank mechanism	**6**

Q.no.	Module 3	Marks
3.a	Make a note on inflection circle	**3**
	Answer b or c	
b	What you mean by cubic stationary curvature? Give the procedure to construct the cubic stationary curvature	**6**

c	What is the application of Euler savary equation. Derive it	**6**

Q.no.	**Module 4**	**Marks**
4.a	Discuss the process of geometrical and analytical synthesis.	**3**
	Answer b or c	
b	Discuss about type and number synthesis	**6**
c	Explain function generation and path generation method	**6**

Q.no.	**Module 5**	**Marks**
5.a	Make a note on shaking force in mechanism	**4**
	Answer b or c	
b	Explain combined static and inertia force analysis.	**8**
c	Discuss dynamic force analysis of a reciprocating engine	**8**

Q.no.	**Module 6**	**Marks**
6.a	Write any four applications of simulation software packages	**4**
	Answer b or c	
b	Explain Denavit Hartenberg parameters	**8**
c	Describe the kinematic analysis of spatial RSSR Mechanism	**8**