Total No. of Questions: 6 *Total No. of Printed Pages:3*

Enrollment No.....

Faculty of Engineering

End Sem Examination Dec 2024

AU3EL11 Two & Three Wheeler Technology

Programme: B.Tech. Branch/Specialisation: AU

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

			Marks	BL	PO	CO	PSO
Q.1	i.	Most of the cars on road has- (a) Single plate clutch (b) Multiplate clutch (c) Both (a) & (b) (d) None of these	**1**	2	1	1	2
	ii.	In bikes the engine is used- (a) 4-stroke petrol (b) 4-stroke diesel (c) 2-stroke petrol (d) 2-stroke diesel	**1**	1	1	2	1
	iii.	Steel plates in multiplate clutch assembly are considered as: (a) Driving plate (b) Driven plate (c) Both (a) & (b) (d) None of these	**1**	2	2	1,2	1
	iv.	Two advantages of using helical gears rather than spur gears in a transmission system are: (a) Strength and cost (b) Strength and less end thrust (c) Noise level and strength (d) Noise level and economy	**1**	1	2	4	1,2
	v.	Trail is provided for- (a) Directional stability (b) Return ability (c) Both (a) & (b) (d) None of these	**1**	1	3	2	2
	vi.	Mechanical trail compared to ground trail is always- (a) More (b) Less (c) Both (a) & (b) (d) None of these	**1**	2	3	2	1,2

P.T.O

	vii.	A 100CC bike has a- (a) Battery ignition system (b) Magneto ignition system (c) Electronic ignition system (d) None of these	**1**	2	3	2	1,2
	viii.	The starter motor is driven by- (a) Chain drive (b) V-belt drive (c) Flat belt drive (d) Gear drive	**1**	3	4	1,2	1
	ix.	The capacity of a battery is expressed in terms of- (a) Current rating (b)Voltage rating (c) Ampere-Hour Rating (d) None of these	**1**	3	5	3	2,1
	x.	The negative plates of a lead acid battery has- (a) Lead Peroxide (PbO_2) (b) Spongy Lead (Pb) (c) Lead Sulphate ($PbSO_4$) (d) Sulphuric acid (H_2SO_4)	**1**	3	5	2	1
Q.2	i.	What is the basic purpose of two wheelers?	**2**	1	1	3	1
	ii.	Write classification of three wheelers.	**3**	1	1	1	1
	iii.	Write short note on development of bikes.	**5**	2	1	2	1
OR	iv.	With neat sketch explain the layout of a moped.	**5**	2	1	2	1
Q.3	i.	Write the importance of primary drive.	**2**	2	2	1	2
	ii.	Explain how assist slipper clutch helps to partial disengage the clutch using a sketch.	**8**	3	2	4	1,2
OR	iii.	Explain constant-mesh gearbox with ball lock type mechanism with sketch.	**8**	3	2	2	1
Q.4	i.	Brief about the necessity of steering in two-wheeler.	**3**	2	3	2	2
	ii.	Explain about the kinematic requirement for two-wheeler suspension system corresponding to front and rear wheel.	**7**	3	3	6	2
OR	iii.	Explain types of trail and its effect on two-wheeler handling.	**7**	3	3	6	1,2
Q.5	i.	Write any four requirements of a good ignition system.	**4**	1	4	1	2
	ii.	Explain handlebar controls of two wheeler with sketch.	**6**	2	4	2	1
OR	iii.	Explain construction and working of stepping motor with sketch.	**6**	3	4	2	1

Q.6		Attempt any two:							
	i.	Explain working of current regulator with sketch.	**5**	2	5	3	1
	ii.	Which are the various systems used for capacity rating of battery?	**5**	3	5	2	2
	iii.	Explain construction and working of an alternator with sketch.	**5**	2	5	2	1

******

Marking Scheme
AU3EL11 (T) Two & Three wheeler Technology (T)

Q.1	i)	(b) Multiplate clutch	**1**
	ii)	(a) 4-stroke petrol	**1**
	iii)	(b) Driven plate	**1**
	iv)	(c) Noise level and strength	**1**
	v)	(a) Directional stability	**1**
	vi)	(b) Less	**1**
	vii)	(a) Battery ignition system	**1**
	viii)	(d) Gear drive	**1**
	ix)	(c) Ampere-Hour Rating	**1**
	x)	(b) Spongy Lead (Pb)	**1**
Q.2	i.	What is the basic purpose of two wheelers?	**2**
		Basic purpose of two wheelers -2 Marks	
	ii.	Write classification of three wheelers.	**3**
		Classification of three wheelers. -3 Marks	
	iii.	Write short note on development of Bikes.	
		Short note on development of Bikes. -5 Marks	
OR	iv.	With neat sketch explain the layout of a moped.	**5**
		Sketch -2 Marks	
		Explanation -3 Marks	
Q.3	i.	Write the importance of primary drive.	**2**
		Importance of primary drive. -2 Marks	
	ii.	Explain how assist slipper clutch helps to partial disengage the clutch using a sketch.	**8**
		Explanation -5 Marks	
		Sketch -3 Marks	
OR	iii.	Explain constant-mesh gearbox with ball lock type mechanism with sketch.	**8**
		Explanation -5 Marks	
		Sketch -3 Marks	
Q.4	i.	Brief about the necessity of steering in two-wheeler.	**3**
		Necessity of steering in two-wheeler. -3 Marks	
	ii.	Explain about the kinematic requirement for two-wheeler suspension system corresponding to front and rear wheel.	**7**
		Explanation (Front wheel) -2.5 Marks & Diagram - 1 Marks	
		Explanation (Rear wheel) -2.5 Marks & Diagram - 1 Marks	
OR	iii.	Explain types of trail and its effect on two-wheeler handling.	**7**
		Types of trail - 3 marks	
		Effect on two wheeler handling - 4 marks	
Q.5	i.	Write any four requirements of a good ignition system.	**4**
		Any four requirements - 4 marks	
	ii.	Explain handlebar controls of two wheeler with sketch.	**6**
		Explanation -4 Marks	
		Sketch -2 Marks	
OR	iii.	Explain construction and working of stepping motor with sketch.	**6**
		Explanation -4 Marks	
		Sketch -2 Marks	
Q.6		Attempt any two:	
	i.	Explain working of current regulator with sketch.	**5**
		Explanation -3 Marks	
		Sketch -2 Marks	
	ii.	Explain in brief various systems used for capacity rating of battery?	**5**
		Explanation -5 Marks	
	iii.	Explain construction and working of an alternator with sketch.	**5**
		Construction -3 Marks	
		Working -2 Marks	

******