

Enrollment No.....



## Faculty of Engineering

End Sem (Even) Examination May-2022

AU3EL11 Two &amp; 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.

- Q.1 i. These are considered as two wheelers- **1**  
 (a) Mopeds (b) Autopeds (c) Scooters (d) All of these
- ii. Most of the cars on road has- **1**  
 (a) Single plate clutch (b) Multiplate clutch  
 (c) Both (a) and (b) (d) None of these
- iii. Automatic scooters have- **1**  
 (a) Gearbox (b) CVT  
 (c) Both (a) and (b) (d) None of these
- iv. Bikes has a- **1**  
 (a) Multiplate clutch (b) Centrifugal clutch  
 (c) Single plate clutch (d) None of these
- v. Steering is used for- **1**  
 (a) Cornering (b) Directional stability  
 (c) Both (a) and (b) (d) None of these
- vi. Neutral indicator shows- **1**  
 (a) No gear is engaged (b) Engine idling  
 (c) Both (a) and (b) (d) None of these
- vii. Water temperature warning lights, lighting a green signal when temperature is: **1**  
 (a) Below 45°C (b) Above 45°C  
 (c) Below 120°C (d) Above 120°C
- viii. Which of the following controls are not present on left side handlebar of motorcycle? **1**  
 (a) Passing light switch (b) Kill switch  
 (c) Horn (d) Side indicator switch
- ix. Which of the following is true of a 12-volt automobile battery? **1**  
 (a) It has six cells connected in series.  
 (b) It has three cells connected in series.  
 (c) It has six cells connected in parallel.  
 (d) It has three cells connected in parallel

- x. To limit the flow of current in fluorescent lighting, uses: **1**  
 (a) A ballast (b) A resistance (c) A load (d) None of these

- Q.2 i. What is the basic purpose of two wheelers? **2**  
 ii. Write the classification of two wheelers. **3**  
 iii. With neat sketch explain the layout of a moped. **5**  
 OR iv. Classification of three wheelers. Draw the layout of auto-rickshaw. **5**

- Q.3 i. Which gearbox is mostly used in motorcycles? **2**  
 ii. With neat sketch explain working of CVT. Also state advantages of CVT. **8**  
 OR iii. How assist slipper clutch helps to partial disengage the clutch? Explain with neat diagrams. **8**

- Q.4 i. Define caster, rack angle and wheel base. **3**  
 ii. Explain construction and working of single link and double link type front suspension with neat sketch. **7**  
 OR iii. Explain construction of steering column with sketch. **7**

- Q.5 i. Explain any four lights present in the panel meter of motorcycle in brief. **4**  
 ii. Explain handlebar controls with necessary diagrams. **6**  
 OR iii. Why side stand/ignition interlock is important? How its work? Explain. **6**

- Q.6 Attempt any two: **5**  
 i. Draw neat diagram showing various components of a battery. Also explain function of each component. **5**  
 ii. How regulator works? Explain two types of regulator used for two-wheeler charging system. **5**  
 iii. How does electric horn work? Explain with neat sketch. **5**

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## Marking Scheme

### AU3EL11 Two & Three Wheeler Technology

Q.1	i.	These are considered as two wheelers-		<b>1</b>
		(d) All of these		
	ii.	Most of the cars on road has-		<b>1</b>
		(a) Single plate clutch		
	iii.	Automatic scooters have-		<b>1</b>
		(b) CVT		
	iv.	Bikes has a-		<b>1</b>
		(a) Multiplate clutch		
	v.	Steering is used for-		<b>1</b>
		(c) Both (a) and (b)		
	vi.	Neutral indicator shows-		<b>1</b>
		(a) No gear is engaged		
	vii.	Water temperature warning lights, lighting a green signal when temperature is:		<b>1</b>
		(a) Below 45°C		
	viii.	Which of the following controls are not present on left side handlebar of motorcycle?		<b>1</b>
		(b) Kill switch		
	ix.	Which of the following is true of a 12-volt automobile battery?		<b>1</b>
		(a) It has six cells connected in series.		
	x.	To limit the flow of current in fluorescent lighting, uses:		<b>1</b>
		(a) A ballast		
Q.2	i.	Basic purpose of two wheelers		<b>2</b>
	ii.	Classification of two wheelers		<b>3</b>
		As per the explanation		
	iii.	Layout of a moped	3 marks	<b>5</b>
		Diagram	2 marks	
OR	iv.	Classification of three wheelers	2 marks	<b>5</b>
		Layout of auto-rickshaw	3 marks	
Q.3	i.	Gearbox is mostly used in motorcycles		<b>2</b>
	ii.	Working of CVT	4 marks	<b>8</b>
		Neat Sketch	2 marks	
		Advantages of CVT	2 marks	
OR	iii.	Assist slipper clutch helps to partial disengage the clutch		<b>8</b>
			5 marks	
		Diagrams	3 marks	
Q.4	i.	Caster, rack angle and wheel base.		<b>3</b>

		1 mark for each	(1 mark * 3)	
	ii.	Single link suspension		<b>7</b>
		Construction	1 mark	
		Working	1.5 marks	
		Neat sketch	1 mark	
		Double link type front suspension		
		Construction	1 mark	
		Working	1.5 marks	
		Neat sketch	1 mark	
OR	iii.	Construction of steering column	5 marks	<b>7</b>
		Sketch	2 marks	
Q.5	i.	Any four lights present in the panel meter of motorcycle		<b>4</b>
		1 mark for each	(1 mark * 4)	
	ii.	Handlebar controls	4 marks	<b>6</b>
		Diagrams	2 marks	
OR	iii.	Importance of side stand/ignition interlock	3 marks	<b>6</b>
		Its working	3 marks	
Q.6		Attempt any two:		
	i.	Components of a battery with diagram	2 marks	<b>5</b>
		Function of each component	3 marks	
	ii.	Regulator works	1 mark	<b>5</b>
		Two types of regulators	4 marks	
	iii.	Electric horn work	3 marks	<b>5</b>
		Sketch	2 marks	

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