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Enrollment No.....



Faculty of Engineering
End Sem (Even) Examination May-2018
AU3CO09 Automotive Electricals and Electronics

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. What is the material of battery block structure? **1**
(a) Polypropylene (b) Polymethylene
(c) Polyethylene (c) Polybutylene
- ii. The positive terminal is always **1**
(a) Thicker than –ve terminal (b) Thicker than +ve terminal
(c) Is equal to +ve terminal (d) None of these
- iii. Where is the location of starting motor? **1**
(a) Near gear box (b) On steering
(c) On clutch (d) On flywheel
- iv. When engine is running, electric power is received by the **1**
consumers from
(a) Alternator (b) Engine (b) Battery (d) Distributor
- v. Which of your vehicle's lights do you have on if you are driving in **1**
fog
(a) Park lights (side lights) (b) Front and rear fog lights
(c) Dipped headlights (d) All of these
- vi. The following type(s) of Oil pump(s) is (are) used in Engine **1**
Lubrication system
(a) Gear type (b) Rotor type (c) Plunger type(d) All of these
- vii. To determine the amount of oxygen, the sensor used is: **1**
(a) Lambda sensor (b) Throttle position sensor
(c) Wheel speed sensor (d) MAF sensor

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- viii. A piezo-electrical crystal generates voltage when subjected to _____ force. **1**
 (a) Electrical (b) Mechanical(c) Gravity (d) All of these
- ix. In Battery coil ignition system, the correct sequence of flow of current is **1**
 (a) Battery – Ammeter – Ignition coil – Distributor – Spark plug
 (b) Battery – Ignition coil – Ammeter – Distributor – Spark plug
 (c) Battery – Ammeter – Distributor – Ignition coil – Spark plug
 (d) Battery – Distributor – Ammeter – Ignition coil – Spark plug
- x. The following is known as ‘Breakerless Ignition system’ **1**
 (a) Battery coil ignition system
 (b) Magneto Ignition system
 (c) Electronic Ignition system
 (d) Capacitive discharge Ignition system
- Q.2 i. What is the usage of providing ribs on battery plates? **2**
 ii. Explain different type of test performed to check battery performance. **3**
 iii. Explain trouble, cause and remedy of lead acid battery. **5**
- OR iv. Explain the characteristic curve of battery charge and discharge voltage. **5**
- Q.3 i. Explain the basic principle of starting motor. **2**
 ii. How the cut out relay works for battery overcharging? **3**
 iii. Which unit is being used for regulating current and voltage in dynamo explain with the help of neat diagram? **5**
- OR iv. How the electric cranking motor works? Explain electric circuit diagram of cranking motor? **5**
- Q.4 i. Explain working of speedometer with neat diagram. **4**
 ii. Explain how double diaphragm type electric horn work with neat diagram? **6**
- OR iii. What is Headlight dazzling while driving? How the headlight of automobile vehicle is adjusted for proper focus? **6**

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- Q.5 i. Explain basic function of cruise control system. **4**
 ii. What is the use of detonation sensor in emission control and how it works? **6**
- OR iii. Explain how oxygen sensor works with neat diagram. **6**
- Q.6 Attempt any two:
 i. Which type of ignition system work in 2-wheelers & how this ignition system work? **5**
 ii. What do you mean by multipoint fuel injection system? **5**
 iii. How solid state ignition system works explain with the help of neat sketch? **5**

Marking Scheme

AU3CO09 Automotive Electricals and Electronics

Q.1	i.	What is the material of battery block structure?	1
	(a)	Polypropylene	
	ii.	The positive terminal is always	1
	(a)	Thicker than –ve terminal	
	iii.	Where is the location of starting motor?	1
	(d)	On flywheel	
	iv.	When engine is running, electric power is received by the consumers from	1
	(a)	Alternator	
	v.	Which of your vehicle's lights do you have on if you are driving in fog	1
	(b)	Front and rear fog lights	
Q.2	vi.	The following type(s) of Oil pump(s) is (are) used in Engine Lubrication system	1
	(d)	All of these	
	vii.	To determine the amount of oxygen, the sensor used is:	1
	(a)	Lambda sensor	
	viii.	A piezo-electrical crystal generates voltage when subjected to _____ force.	1
	(b)	Mechanical	
	ix.	In Battery coil ignition system, the correct sequence of flow of current is	1
	(a)	Battery – Ammeter – Ignition coil – Distributor – Spark plug	
	x.	The following is known as 'Breakerless Ignition system'	1
	(c)	Electronic Ignition system	
Q.2	i.	Usage of providing ribs on battery plates	2
	ii.	Any two tests performed to check battery performance.	3
		1.5 marks each (1.5 marks *2)	
OR	iii.	Any three troubles, cause and remedy of lead acid battery.	5
	iv.	Characteristic curve of battery charge and discharge voltage	5
		1.5 marks each (1.5 marks * 2) 3 marks	
		Explanation 2 marks	

Q.3	i.	Principle of starting motor.		2
	ii.	Cut out relay works for battery overcharging		3
		Diagram 1.5 marks		
		Functioning 1.5 marks		
	iii.	Diagram 2.5 marks		5
		Explanation 2.5 marks		
OR	iv.	Electric cranking motor works	2.5 marks	5
		Electric circuit diagram of cranking motor	2.5 marks	
Q.4	i.	Working of speedometer	2 marks	4
		Diagram.	2 marks	
	ii.	Diagram of Electric horn	3 marks	6
OR		Explanation 3 marks		
	iii.	Headlight dazzling while driving	2 marks	6
		Adjustment procedure	4 marks	
Q.5	i.	Function of cruise control system.		4
		Diagram 2 marks		
		Functioning 2 marks		
	ii.	Use of detonation sensor diagram	2 marks	6
		Functioning of sensor	4 marks	
	OR	iii.		6
		Diagram 2 marks		
		Functioning of sensor	4 marks	
Q.6		Attempt any two:		
	i.	Diagram 2 marks		5
		Functioning 3 marks		
	ii.	Diagram 2 marks		5
		Functioning 3 marks		
	iii.	Diagram 2 marks		5
		Functioning 3 marks		
