

C.U.SHAH UNIVERSITY

Summer Examination-2016

Subject Name : Automotive Electrical and Electronics

Subject Code : 4TE05AEE1

Branch: B.Tech(Auto)

Semester : 5

Date : 29/04/2016

Time : 02:30 To 05:30

Marks : 70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
 - (2) Instructions written on main answer book are strictly to be obeyed.
 - (3) Draw neat diagrams and figures (if necessary) at right places.
 - (4) Assume suitable data if needed.
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- Q-1 Attempt the following questions: (14)**
- a) Substances that strongly oppose movement of electrons are called: 01**
(i)Insulators (ii)semi conductors (iii)Conductors (iv)None of the above
- b) In a transistor the current carriers are 01**
(i)Protons &electrons (ii)holes &electrons (iii)holes & protons (iv)All of above
- c) The increase in temperature of conductor results in 01**
(i)Increase of resistance(ii)reduction of resistance(iii)increase of current (iv)None
- d) The metal rotor arm of the distributor will wear at slower rate if made: 01**
(i)Positive (ii)Negative
- e) The liquid used in battery which is a mixture of sulphuric acid and water is called 01**
(i)Electrolyte (ii)electroliquid (iii)electrochemical (iv)electro conductor
- f) The rectifier is used to 01**
(i)Convert ac to dc
(ii)Convert dc to ac
(iii)Step up current
(iv)Step down current
- g) Increase in plate area of a battery cell increases 01**
(i)Current (ii)voltage (iii)resistance (iv)No change takes place
- h) Which is the most suitable generator for battery charging? 01**
(i)Series (ii)Compound (iii)Shunt (iv)None
- i) The cam angle is the number of degrees that the cam rotates while the contact points are: 01**
(i)Closing (ii)closed (iii)opening (iv)opened
- j) In order to have freedom from short-circuiting the air gap between electrodes 01**
should not be less than
(i)0.2 mm (ii)0.25 mm (iii)0.375 mm (iv)0.15 mm



- k) Spark plug reach is referred as 01
 (i)Distance from seating surface to end of thread
 (ii)Total length of spark plug
 (iii)Length of spark
 (iv)None
- l) Which of the following drive in cranking motor belongs to inertia type of drive? 01
 (i)Bendix (ii)barrel type (iii)Friction clutch (iv)None
- m) Which of the following is used to pour electrolyte and water when necessary in battery? 01
 (i)Delco eye (ii)Container (iii)Vent plug (iv)Cell containers
- n) 4-h rating of battery is used for: 01
 (i)Heavy vehicles (ii)Light vehicles (iii)jumbo jets (iv)All of above

Attempt any four questions from Q-2 to Q-8

- Q-2 Attempt all questions (14)**
 a) Explain Starting system and Ignition system of Vehicle. 07
 b) Explain Positive and Negative earthing. 07
- Q-3 Attempt all questions (14)**
 a) Explain with neat sketch Anti-lock braking system. Also define its component in detail. 07
 b) List types of CRDI system. Explain any one in detail with neat sketch. 07
- Q-4 Attempt all questions (14)**
 a) Explain lead acid battery construction with neat sketch. 07
 b) State various battery tests and explain any two 07
- Q-5 Attempt all questions (14)**
 a) Give the names of different Types of drive mechanisms. Explain Folo-thru drive with neat sketch. 07
 b) Explain construction details of a Spark Plug with the help of neat sketch. Differentiate between Hot and Cold Spark Plug. 07
- Q-6 Attempt all questions (14)**
 a) What is traction? Explain traction control system in vehicle with neat sketch 07
 b) Explain Function and working of electric horn and its relay. 04
 c) Explain Centrifugal & vacuum advance mechanisms. 03
- Q-7 Attempt all questions (14)**
 a) Explain Ballast Resistance & Cam Angle and Contact Points Gap. 07
 b) Explain windscreen wiper. 07
- Q-8 Attempt all questions (14)**
 a) Explain and Draw circuit diagram of Door Operated Interior Lights. 07
 b) Explain the requirement of sensors in automobiles and explain any two sensors in detail 07

