



Name :

Roll No. :

Invigilator's Signature :

**CS/B.Tech (AUE)/SEM-6/AUE-601/2010
2010**

AUTOMOTIVE ELECTRICAL SYSTEM & ELECTRONICS

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following :

$$10 \times 1 = 10$$

- i) In case of horn, the number of vibrations per second determines the
- a) frequency of the sound
 - b) pitch of the sound
 - c) loud warning signal
 - d) all of these.
- ii) Example of first category switch in a car is
- a) Cut-out
 - b) Ignition
 - c) Radio
 - d) both (b) & (c).



- iii) Operation of Electronic Ignition System depends on
- a) Capacitive discharge principle
 - b) Movement of flywheel
 - c) Current flow in input coil
 - d) none of these.
- iv) For the hand lamp aiming, the car on a level floor will take the position from the screen about
- a) 10 m
 - b) 12.2 m
 - c) 7.6 m
 - d) 6.7 m.
- v) Which one is applicable for wiper system ?
- a) Transformer
 - b) Servo motor
 - c) Stepper motor
 - d) D.C. motor.
- vi) The main part of headlight is
- a) Principal axis
 - b) Focal length
 - c) Pole
 - d) Reflector.
- vii) Odometer records
- a) speed of a car
 - b) quantities of fluid
 - c) total distance the car has travelled
 - d) none of these.

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GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following.

3 × 15 = 45

7. a) With proper circuit diagram give the brief description about Horn.
b) Write a short note on Lighting Relay. 9 + 6
 8. a) What is electronic ignition system ? With proper circuit diagram describe the working principle of Electronic Ignition System (EIS).
b) What is relay ? Why is it useful for automobile engineering ? 12 + 3
 9. a) Describe Wiper System of a car.
b) Draw the circuit layout for total lighting system of a vehicle. 5 + 10
 10. a) We are using 3-point starter at the starting period of d.c. motor. Why ? Explain.
b) What is critical resistance of a d.c. generator ?
c) What is residual magnetism ?
d) Draw and explain the characteristics of shunt wound generator. 3 + 2 + 2 + 8
 11. Write short notes on any *three* of the following : 3 × 5
 - a) Speed Sensor
 - b) Stepper Motor
 - c) Commutation
 - d) Split Ring
 - e) Speedometer.
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