

**FIRST YEAR KGCEEXAMINATIONIN AUTOMOBILE ENGINEERING
AUTOMOBILE ENGINEERING-II (TRADE THEORY)**

ANSWER KEY

MODEL QUESTION PAPER SET-1

PART-A

(There should be at least 3 questions from each module)

(MaximumMarks: 20x1 Marks = 20 Marks)

I.

Qn. No.	Answers	Mark	Total Mark
1	c) Pascal's Law	1	1
2	a) Anti Lock brake system	1	1
3	a) Frame	1	1
4	b) Aspect ratio	1	1
5	c) Shackle.	1	1
6	a) Positive crankcase ventilation	1	1
7	a) Diluted sulphuric acid	1	1
8	b) Transistor	1	1
9	c) Lead Sulphate	1	1
10	b) Condenser	1	1
11	d) Starting system	1	1
12	b) Rectifier	1	1
13	a) Dimmer switch	1	1
14	a) Horn relay	1	1
15	a) Starting System	1	1
16	a) Hybrid vehicle	1	1
17	d) Onboard diagnostic system	1	1
18	d) Magnetic clutch	1	1
19	a) Oxygen Sensor	1	1
20	b) Exhaust Gas Recirculation	1	1

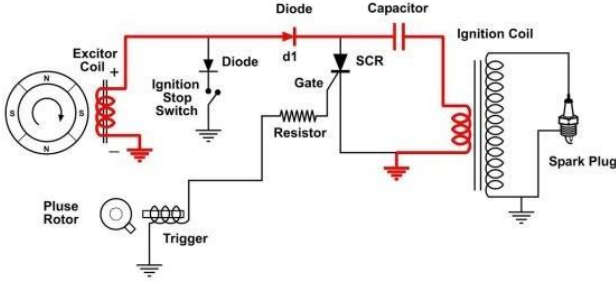
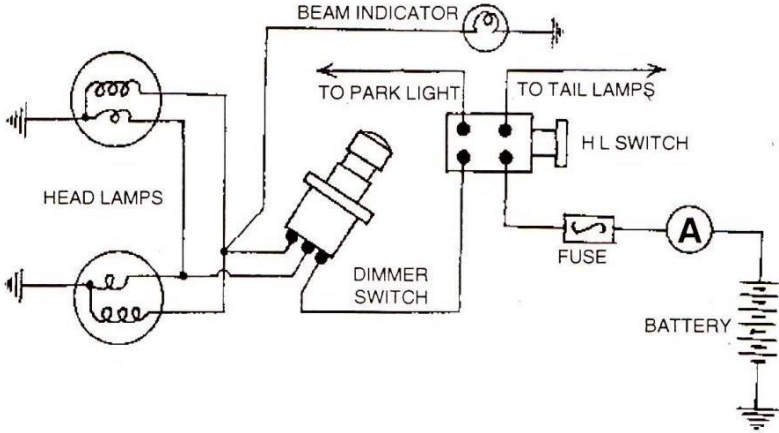
PART-B

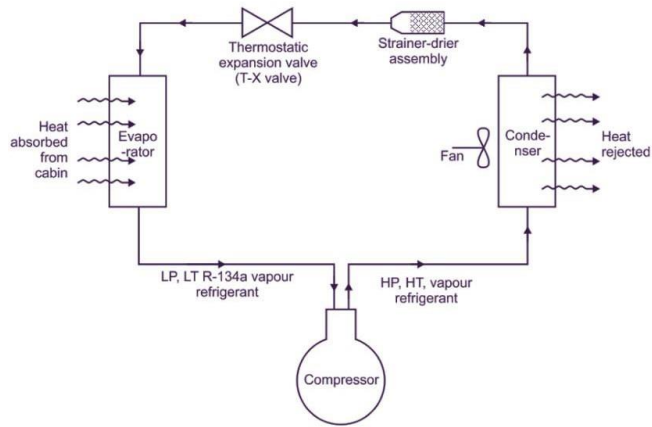
(There should be at least 2 questions from each module)

(MaximumMarks: 8x5 Marks = 40 Marks)

II Answer *any eight* questions from the following. Each question carries marks.5 Marks.

Qn. No.	Answers	Mark	Total Mark
1	<p>Classification of brakes</p> <p>On the Basis of Method of Actuation</p> <p>(a) Foot brake (service brake) operated by foot pedal.</p> <p>(b) Hand brake – (parking brake) operated by hand.</p> <p>On the Basis of Construction</p> <p>(a) Drum Brake</p>	1x5	5

	<p>Different types of ignition systems are:</p> <ol style="list-style-type: none"> Battery ignition system or coil ignition system. Magneto ignition system. Electronic ignition system 	3	
6	<p>Capacitor discharge ignition system</p>  <p>Diagram Any six parts</p>	2 3	5
7	<p>Alternator contains two windings such as a stator (stationary outside winding) and a rotor (rotating inner winding). The battery supplies voltage to the rotor winding which energizes and turns it into a magnet. Via a pulley, the rotor is rotated by the engine through a drive belt. As the magnetic field is produced by the rotating rotor, it induces AC electric current in the stationary stator winding. The rectifier help to convert the AC to DC the vehicle's electrical system requires. Regulator is built-in in the alternator which controls the output voltage.</p>	5	5
8	 <p>Diagram Any 6 parts</p>	2 3	5
9	<p>Keyless entry is a feature that allows you to lock and unlock your vehicle without inserting a key in the car door. If a car requires a key for access, you insert the key into the lock on the car door and turn it. You have to do this every time you need to unlock or lock the door. Keyless car systems work by transmitting unique low-frequency signals between a keyless electronic fob or "smart key" and the vehicle's computer. The fob doesn't need to go into the doors, trunk, or ignition. Instead, short-range sensors allow you to unlock your car without manually putting in a key.</p>	5	5

<p>10</p>	 <p>Lay out Parts</p>	<p>2 3</p>	<p>5</p>
<p>11</p>	<p>Actuators are an essential part of electronic control systems in passenger cars and commercial vehicles. It is their job to convert the electrical signals from the control unit into an action. Most actuators are electric motors or electro-magnetic valves. They adjust flaps, for example, regulate the flow of fluids or actuate pumps to build up pressure (e.g. in brake and steering systems). In the engine control system, actuators regulate the idle speed, control air flaps for torque and power optimisation and meter fuel for optimum combustion. In recent years, powerful actuators in all manner of different designs have made numerous safety and assistance functions possible. Actuators are the means via which drivers are provided with assistance in critical situations, thus helping to avoid accidents or moderate their severity.</p>	<p>5</p>	<p>5</p>
<p>12</p>	<p>A plug-in hybrid electric vehicle (PHEV) uses a battery to power an electric motor and uses another fuel, such as gasoline or diesel, to power an internal combustion engine. The battery pack in a PHEV is generally larger than in a standard hybrid electric vehicle. The larger battery pack allows the vehicle to operate predominantly on electricity during short trips. For longer trips, a PHEV can draw liquid fuel from its onboard tank to provide a driving range similar to that of a conventional vehicle. An onboard computer decides when to use which fuel according to which mode allows the vehicle to operate most efficiently. The battery can be charged by plugging into an electric power source, through regenerative braking, and by the internal combustion engine. In regenerative braking, kinetic energy normally lost during braking is captured and stored in the battery.</p>	<p>5</p>	<p>5</p>