

QUESTIONS :-

1) Explain the journey of automobile with the help of flow chart from the beginning of 18th Century to the 21st Century & give brief description on the following milestones in the automobile

2) TOURNEY :-

- a) Invention of Electric Motor
- b) Golden Era of EV
- c) Domination of electric vehicle by Gasoline cars
- d) Coming of new Era in EV
- e) Introduction of Hybrid Electric Vehicle

1806 - Francois Isaac de Rivaz invented a hydrogen powered IC engine

1884 - Carl - benz production of IC engine vehicle

1886 - electric vehicle to under production

1906 - electric vehicle very advanced

1910 - Henry ford, assembly line production

1912 - Chevrolet Self start Mechanism

1991 - low emission vehicle I introduced

2003 - low emission vehicle II introduced
→ low emission vehicle
→ ultra low emission vehicle
→ pure zero emission vehicle

2006 - Santa Monica auto expo Tesla introduced Roadster electric car

2010 - Nissan introduced first-affordable 5 door hatchback EV

INVENTION OF ELECTRIC MOTOR

Early incarnations of the electric motor first appeared in the 1740's through the work of Scottish, Benedictine Monk Scientist, Andrew Gordon. Other Scientists such as Michael Faraday and Joseph Henry continued to develop early motors, experimenting with electromagnetic fields and discovering how to convert electrical energy into mechanical energy.

History was made when Thomas Davenport of Vermont invented the first official battery powered electric motor in 1834. This was the first electric motor that had enough power to perform a task and its invention was used to power a small-scale printing press.

GOLDEN ERA OF EV

Golden age of electric vehicle marked from 1890 to 1924 with peak production of electric vehicle in 1912. However, the range was limited by energy storage in the battery.

DOMINATION OF ELECTRIC VEHICLE BY GASOLINE CARS

Gas cars dominated the industry and have done for decades with little competition - that is until, recently, with EVs being the next big thing.

Gasoline cars could generally drive further and faster and even do it over rough terrain. EVs were quiet, clean and user friendly, but were limited in range, struggled to drive up hills and suffered the lack of charging infrastructure.

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The discovery of oil in Texas further exacerbated situation. with a plentiful supply of oil on its door step, gasoline - powered Motoring suddenly got a lot cheaper in america. It was cheaper than electricity at the time and Made the choice between Ev or gasoline Much simpler.

At this point, as Evs began to feel the effects of the Scandal, buyers began to realize the gas cars were, from a practical and financial point of view at least, a superior form of transport.

e) INTRODUCTION OF HYBRID ELECTRIC VEHICLES

A hybrid electric vehicle (HEV) is a type of hybrid vehicle that combines a conventional internal combustion engine (ICE) system with an electric propulsion system (hybrid vehicle drivetrain). The presence of the electric powertrain is intended to achieve either better fuel economy than a conventional vehicle or better performance. There is a variety of HEV types and the degree to which each functions as an electric vehicle (EV) also varies. The most common form of HEV is the hybrid electric car, although hybrid electric trucks (pickups & tractors) buses, boats, and aircraft also exist.