

MULTIPLE CHOICE QUESTIONS

ELECTRIC VEHICLES

1. Select one which is not type of electrical cars
(a) BEV (battery electrical vehicle)
(b) PHEV (plug- in Hybrid electrical vehicle)
(c) Hybrid
(d) UPHVE (ultra PHVE) [Ans (d)]
2. How many types of electrical cars are there?
(a) 4 (b) 3
(c) 2 (d) 1 [Ans. (b)]
3. When the brakes are pressed, the motor becomes
(a) alternator (b) inverter
(c) converter (d) nothing will happen [Ans. (a)]
4. Who is the brain of electrical cars?
(a) Gear system (b) Controller
(c) Governing system (d) inverter [Ans. (b)]
5. Which one the following is not a type of charging in Electrical car?
(a) AC charging (b) DC charging
(c) Tap charging (d) Trickle charging [Ans. (c)]
6. Control system in electrical cars is controls the speed by
(a) Changing the voltage (b) Changing the inductance
(c) Changing the frequency (d) Changing the capacitance [Ans. (c)]
7. Controller is use for _____ in Electrical Car
(a) Change the voltage (b) Change the current
(c) Change the frequency (d) Change the resistance [Ans. (c)]
8. In electrical car power is converted from
(a) AC to DC (b) Half wave to full wave
(c) DC to AC (d) Full wave to half wave [Ans. (c)]
9. The slowest method of charging is known as____
(a) AC charge (b) DC charge
(c) Trickle charge (d) Dash charge [Ans. (c)]
10. How many types of available for electrical car charging?
(a) 2 (b) 3 (c) 4 (d) 5 [Ans. (b)]

11. Electric vehicles can only be used as commuter vehicles because of their limited range.
(a) True (b) False [Ans. (b)]
12. How many approx. kilo-meters are driven by one battery?
(a) 1 lakh km (b) 1.6 lakh km
(c) 3.1 lakh km (d) 9 lakh km [Ans. (b)]
13. Battery life of Electrical cars is generally _____ years
(a) 5 (b) 4 (c) 8 (d) 10 [Ans. (c)]
14. Which one is the most popular drive used in EV?
(a) Permanent magnet synchronous motor drive
(b) Brushed motor drive
(c) Both of above
(d) None of these [Ans. (a)]
15. The braking system used in EV is _____
(a) Hydraulic brake (b) Regenerative brake
(c) Combination of both of above brake
(d) None of these [Ans. (c)]
16. Most preferred motor by electrical car makers is
(a) BLDC (brush less DC motor) (b) IM (induction Motor)
(c) Both of above (d) None of the above [Ans. (c)]
17. Which kind of battery is good to use in EV?
(a) Lithium-ion batteries (b) Nickel-metal hybrid batteries
(c) Lead-acid battery (d) All of them [Ans. (d)]
18. Select one which is not type of the safety of electrical vehicle?
(a) Protection against electrical shock
(b) Battery safety
(c) Chemical hazard
(d) None of the above [Ans. (d)]
19. Minimum range of charging time of battery of car is _____
(a) 1 to 2 hours (b) 2 to 4 hours
(c) 4 to 20 hours (d) 20 to 30 hours [Ans. (c)]
20. The mile range of electrical cars is normally _____ on full charge
(a) 60 to 100 miles (b) 20 to 50 miles
(c) 100 to 150 miles (d) 10 to 40 miles [Ans. (a)]
21. Now a days what is the major problem facing by people in EC (electrical car)?
(a) Car require more maintenance
(b) Recharging battery takes time

- (c) Car is too expensive
(d) All of these [Ans. (b)]
22. Electrical car require _____ maintenance then gas/diesel car.
(a) More (b) Less
(c) Same (d) Nothing to say [Ans. (b)]
23. Which one is the best advantage to owning electrical car?
(a) Better for drive (b) Better for initial cost
(c) Better for environment (d) None of the above [Ans. (c)]
24. What voltage level is available for battery of electrical car?
(a) 21 V to 51 V (b) 12 V to 15 V
(c) 1000 V to 2000 V (d) 100 V to 400 V [Ans. (d)]
25. Which vehicle has smallest number of components?
(a) Traditional vehicle (b) Hybrid vehicle
(c) Electrical vehicle (d) CNG vehicle [Ans. (c)]
26. Who invented the battery?
(a) Alessandro Volta (b) Alexander Bell
(c) Alessandro Bell (d) Tim Southee [Ans. (a)]
27. When was the first electric car invented?
(a) 1830 (b) 1985
(c) 1832 (d) 1945 [Ans. (c)]
28. What country has the most EVs?
(a) China (b) Norway
(c) Iceland (d) United Arab Emirates [Ans. (b)]
29. According to the Department of Energy, what percentage of EV charging happens at home?
(a) 50% (b) 75%
(c) 80% (d) 90% [Ans. (c)]
30. An EV only needs one of the following maintenance jobs done. Which is it?
(a) Oil change (b) Belt replacement
(c) New spark plugs (d) Brake pad inspections [Ans. (d)]
31. Electric vehicles are less expensive to own and operate than conventional, internal combustion engines.
(a) True (b) False [Ans. (a)]
32. A level 1 charger is like plugging into a standard, 220-volt outlet and does not require special equipment or installation. This type of charging is also known as trickle charging.
(a) True (b) False [Ans. (a)]

33. What is a Time of Use Rate (TOU)?
 (a) A rate offered by some utilities to incentivize customers to use electricity during specific times, generally in low demand times
 (b) A rate offered by some utilities that's based on the length of time an electric vehicle is charging
 (c) A rate offered by some utilities to disincentivize the use of electricity
 [Ans. (a)]
34. Electric vehicles produce fewer emissions than conventional vehicles.
 (a) True (b) False [Ans. (a)]
35. Electric vehicles can only be used as commuter vehicles because of their limited range.
 (a) True (b) False [Ans. (b)]
36. In what year was the first car powered by an electric motor?
 (a) 1911 (b) 1827 (c) 1962 (d) 1899 [Ans. (b)]
37. True or False: A hydrogen fuel cell vehicle is a type of electric vehicle.
 (a) True (b) False [Ans. (a)]
38. Which of these companies is the only one WITHOUT plans for an all-electric pickup truck?
 (a) Toyota (b) GMC (c) Ford (d) Ram [Ans. (d)]
39. Which EV is featured in Avengers: Endgame?
 (a) Jaguar I-Pace (b) Tesla Model X
 (c) Audi E Tron (d) Porsche Taycan [Ans. (c)]
40. What makes the risk of an electric shock from a high-voltage battery possibly more dangerous than that an AC circuit?
 (a) Higher voltage (b) Lower amperage
 (c) Greater available amperage [Ans. (c)]
41. Who coined the term battery?
 (a) George Franklin (b) Benjamin Fernandes
 (c) Benjamin Franklin (d) George Bush [Ans. (c)]
42. What combustion engines can be used in combination with an electric motor?
 (a) this doesn't matter (b) gasoline engines
 (c) diesel engines (d) common rail diesel engines
 [Ans. (a)]

HYBRID VEHICLES

1. A hybrid vehicle
 (a) Has a higher top speed (b) Have to be charged every 100km
 (c) Consumes more fuel (d) Consumes less fuel [Ans. (d)]

2. What was the first commercial hybrid car?
 (a) Lexus RX400h (b) Honda Civic Hybrid
 (c) Toyota Prius [Ans. (c)]
3. When was the first hybrid car on the road?
 (a) 1951 (b) 1920
 (c) 2003 (d) 1899 (e) 1992 [Ans. (d)]
4. What is the operating voltage of the Toyota Prius version 2004?
 (a) 104 volts (b) 500 volts
 (c) 50 volts (d) 399 volts (e) 288 volts [Ans. (b)]
5. What is the definition of a hybrid car?
 (a) A car that runs on electricity
 (b) A car that uses two (or more) distinct power sources to propel the vehicle.
 (c) A car that runs on gas
 (d) A car that generates electricity when it brakes [Ans. (b)]
6. What's the difference between a plug-in hybrid and a battery electric vehicle?
 (a) There is no difference
 (b) A plug-in hybrid only accepts AC power, while a battery electric vehicle accepts AC and DC power
 (c) A plug-in hybrid can be powered by either the battery or the gasoline engine. A pure electric vehicle is powered only by the battery [Ans. (c)]
7. When did Toyota launch the first hybrid Prius in Japan?
 (a) 1997 (b) 2003 (c) 2000 (d) 2006 [Ans. (a)]
8. In a parallel hybrid:
 (a) One engine drives the front, the other the rear axle
 (b) Is the front axle engine driven by the strongest and the rear axle driven by the weakest engine
 (c) The wheels are powered by both engines
 (d) Is the front axle engine driven by the weakest and the rear axle driven by the strongest engine
 (e) Will the wheels be driven by the most powerful engine, this engine is in turn assisted by the less powerful engine [Ans. (c)]
9. In a series-switched hybrid:
 (a) Goes the power through a succession of motors to the wheels
 (b) The engines simultaneously drive the front and the rear axle
 (c) Is the strongest engine in series with the wheels
 (d) Is the weakest engine in series with the wheels [Ans. (a)]

10. What's the big advantage of the combined hybrid?
(a) You can manage the consumption better
(b) You can brake harder
(c) You can accelerate harder
(d) You can also use only the electric motor
(e) You can combine both engines [Ans. (d)]
11. Which of the following is NOT the type of hybrid vehicle?
(a) Plug-in hybrid (b) Parallel hybrid
(c) Natural gas for vehicles (d) Series hybrid [Ans. (c)]
12. The hybrid electric vehicle consists of:
(a) Internal combustion engine + electric motor
(b) Motor electric 1 + Motor electric 2
(c) NGV engine + Gasoline engine [Ans. (a)]
13. "In this system, the engine is used to supply electrical power to the motor, which then turns the wheels"
(a) Select the type of hybrid system according to above description.
(b) Series hybrid (c) Parallel hybrid
(d) Plug-in hybrid (e) Series-parallel hybrid [Ans. (a)]
14. "The wheels are driven by both the engine and the motor".
(a) Select the type of hybrid system according to above description.
(b) Series hybrid (c) Parallel hybrid
(d) Plug-in hybrid (e) Series-parallel hybrid [Ans. (b)]
15. Select the features of hybrid electric vehicles
A. Idle stop
B. EV drive
C. Motor assist
D. Regenerative braking
(a) A & B (b) A & C
(c) A, B, C & D (d) A [Ans. (c)]
16. The electric motor in a hybrid car can also act as:
(a) Cooling fan (b) Fuel pump
(c) Generator [Ans. (c)]
17. Regenerative braking involves
(a) Nanofibers that repair the surface of brake pads
(b) Reducing the amount of friction necessary to slow a car
(c) Reclaiming heat from the brakes and using it for power [Ans. (c)]

18. A ----- is a vehicle that can run on just the engine, just the batteries, or a combination of the two.
 (a) Mild hybrid (b) Full hybrid
 (c) Fuel cell (d) Assist hybrid [Ans. (b)]
19. Select the WRONG statement
 (a) Toyota produced the insight hybrid
 (b) Hybrid systems rely on very high voltages
 (c) All of the high-voltage cables are covered in orange sleeves for easy identification
 (d) To test high-voltage systems you need a category 3 (CAT III) digital volt ohmmeter [Ans. (a)]
20. Select the CORRECT statement about Integrated Motor Assist (IMA) hybrid system
 (a) Produced by Honda
 (b) This system is the basis for many series-parallel hybrid vehicles
 (c) This system is capable of instantaneously switching from one power source to another or combining the two. [Ans. (a)]
21. Answer in True/False
 A. In electric heavy series-parallel HEV, battery is not used in normal driving.
 B. Parallel HEV has dual axle transmission mechanism.
 C. In straight drive, speed of both the motors is same, in dual motor system.
 (a) True, B) False, C) True (b) True, B) False, C) False
 (c) False, B) False, C) True (d) False, B) True, C) True [Ans. (a)]
22. Answer in True/False
 A. With differential action, there is little sliding and wear of tyres.
 B. Ultra capacitors are high voltage devices.
 C. Fixed gear systems require high motor rating.
 (a) True, B) True, C) False (b) False, B) False, C) True
 (c) False, B) True, C) False (d) False, B) True, C) True [Ans. (b)]
23. Answer in True/False
 A. High power motors cannot be designed for lower voltages.
 B. In fixed gear system, design of motor is very important.
 C. Efficiency in variable gear system is high.
 (a) True, B) True, C) False (b) False, B) False, C) True
 (c) False, B) True, C) False (d) False, B) True, C) True [Ans. (b)]

24. Answer in True/False

- A. At low engine speeds, fuel consumption is high.
- B. In ICEV, we don't operate in optimal operation line.
- C. Complex HEV has 3 propulsion devices

- (a) True, B) False, C) True (b) True, B) False, C) False
- (c) False, B) False, C) True (d) False, B) True, C) True [Ans. (a)]

25. Answer in True/False

- A. In parallel HEV, two motors are used.
- B. In ICE heavy series parallel HEV, only mechanical drive train is active during normal driving.
- C. In front electric rear hybrid complex HEV, no battery charging takes place during lights loads.

- (a) True, B) True, C) False (b) True, B) False, C) False
- (c) False, B) False, C) True (d) False, B) True, C) True [Ans.(d)]

26. By what name are traditionally powered vehicles, equipped with a start-stop system, sometimes also known?

- (a) Micro hybrid (b) Full hybrid
- (c) Hybrid [Ans. (a)]

27. Which vehicle uses a high-voltage battery?

- (a) Electric (b) Hybrid
- (c) Both a & b (d) None of the above [Ans. (b)]

28. Which of the following vehicles produces zero emissions?

- (a) Traditional (b) Hybrid
- (c) Electric [Ans. (c)]

29. What voltage is likely to be available from the battery of an electric vehicle or hybrid?

- (a) 12V (b) 300V
- (c) 40V (d) 55V [Ans. (b)]

30. Answer in True/False

- A. In series HEV, battery can be charged at rest.
- B. In parallel HEV, both drive trains are active during normal driving.
- C. In front hybrid rear electric complex HEV, whole system is active in acceleration mode.

- (a) True, B) True, C) False (b) False, B) True, C) False
- (c) True, B) False, C) True (d) False, B) True, C) True [Ans. (c)]