1. Which Bharat Standard (BS) emission norm was implemented up to BS-IV in India?

a) BS-I
b) BS-II
c) BS-III
d) BS-IV

Answer: d) BS-IV
Explanation: Bharat Standard (BS) emission norms in India were implemented up to BS-IV before further upgrades. These norms regulate the permissible levels of pollutants emitted by vehicles.

2. What is the primary method for confirming compliance with emission norms during automobile production?

a) Visual inspection
b) Emission testing
c) Performance evaluation
d) Weight measurement

Answer: b) Emission testing
Explanation: Emission testing is the primary method used to confirm compliance with emission norms during the production of automobiles. This involves measuring the levels of pollutants emitted by vehicles.

3. What are the environmental demerits associated with automobile emissions?

a) Ozone depletion

b) Acid rain formation
c) Global warming
d) All of the above

Answer: d) All of the above
Explanation: Automobile emissions contribute to various environmental issues, including ozone depletion, acid rain formation due to nitrogen oxides (NOx), and global warming caused by greenhouse gases like carbon dioxide (CO2).

4. Which type of catalytic conversion is commonly used in vehicles to reduce harmful emissions?

a) Thermal conversion
b) Chemical conversion
c) Biological conversion
d) Photovoltaic conversion

Answer: b) Chemical conversion
Explanation: Catalytic converters in vehicles use chemical conversion to transform harmful pollutants like carbon monoxide (CO), hydrocarbons (HC), and nitrogen oxides (NOx) into less harmful substances.

5. Which instrument is commonly used to measure carbon monoxide (CO) emissions in vehicle exhaust?

a) NDIR analyzer
b) FID analyzer
c) Chemiluminescent analyzer

d) Gas Chromatograph

Answer: a) NDIR analyzer
Explanation: Non-dispersive infrared (NDIR) analyzers are commonly used to measure carbon monoxide (CO) emissions in vehicle exhaust by detecting the absorption of infrared light by CO molecules.

6. Which technique is suitable for measuring hydrocarbon (HC) emissions in vehicle exhaust?

a) FID analyzer
b) NDIR analyzer
c) Chemiluminescent analyzer
d) Gas Chromatograph

Answer: a) FID analyzer
Explanation: Flame ionization detection (FID) analyzers are suitable for measuring hydrocarbon (HC) emissions in vehicle exhaust by detecting the ions formed when hydrocarbons are burned in a flame.

7. Which method is commonly used to measure nitrogen oxides (NOx) emissions in vehicle exhaust?

a) Chemiluminescent analyzer
b) Gas Chromatograph
c) NDIR analyzer
d) FID analyzer

Answer: a) Chemiluminescent analyzer

Explanation: Chemiluminescent analyzers are commonly used to measure nitrogen oxides (NOx) emissions in vehicle exhaust by detecting the light emitted during the reaction of NOx with ozone.

8. Which instrument is suitable for analyzing particulate matter (PM) emissions in vehicle exhaust?

a) Gas Chromatograph
b) Smoke meter
c) NDIR analyzer
d) Chemiluminescent analyzer

Answer: b) Smoke meter
Explanation: Smoke meters are suitable for analyzing particulate matter (PM) emissions in vehicle exhaust by measuring the opacity of the smoke emitted.

9. Which regulatory body sets emission standards for vehicles in India?

a) Bureau of Indian Standards (BIS)
b) Ministry of Environment, Forest and Climate Change (MoEFCC)
c) Automotive Research Association of India (ARAI)
d) Central Pollution Control Board (CPCB)

Answer: d) Central Pollution Control Board (CPCB)
Explanation: The Central Pollution Control Board (CPCB) is responsible for setting emission standards for vehicles in India.

10. What is the purpose of emission standards in the automotive industry?

a) To increase vehicle performance
b) To reduce fuel consumption
c) To limit the emission of pollutants
d) To improve vehicle safety

Answer: c) To limit the emission of pollutants
Explanation: The primary purpose of emission standards in the automotive industry is to limit the emission of pollutants from vehicles, thus reducing their environmental impact.

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