

1. What is the principle behind mechanical stabilization of roads?

- a) Increasing the road width
- b) Reducing traffic congestion
- c) Reinforcing the road structure using mechanical devices
- d) Adding asphalt to the road surface

Answer: c) Reinforcing the road structure using mechanical devices

Explanation: Mechanical stabilization involves using materials like geogrids or geotextiles to enhance the structural integrity of the road, reducing deformation and improving load-bearing capacity.

2. What are the advantages of mechanical stabilization in road construction?

- a) Reduced construction costs
- b) Improved pavement performance
- c) Faster construction time
- d) Decreased traffic flow

Answer: b) Improved pavement performance

Explanation: Mechanical stabilization helps in improving the performance of pavements by enhancing their strength and durability, reducing maintenance needs and increasing the lifespan of the road.

3. Which of the following is a disadvantage of mechanical stabilization?

- a) Increased construction time
- b) Higher initial cost
- c) Reduced load-bearing capacity
- d) Greater susceptibility to environmental factors

Answer: b) Higher initial cost

Explanation: While mechanical stabilization offers long-term benefits, it often involves higher initial costs compared to conventional road construction methods.

4. What is the primary purpose of surface drainage in roads?

- a) To prevent erosion
- b) To collect and remove surface water
- c) To increase road visibility
- d) To improve road aesthetics

Answer: b) To collect and remove surface water

Explanation: Surface drainage systems are designed to collect and redirect surface water away from the road surface, preventing waterlogging and potential damage to the pavement structure.

5. Which highway material property is crucial for assessing its suitability for construction?

- a) Color
- b) Texture
- c) Density

d) Strength

Answer: d) Strength

Explanation: Strength is a fundamental property of highway materials as it determines their ability to withstand traffic loads and environmental stresses without deformation or failure.

6. What is the purpose of channelized intersections?

- a) To slow down traffic
- b) To facilitate smooth traffic flow
- c) To increase traffic congestion
- d) To encourage reckless driving

Answer: b) To facilitate smooth traffic flow

Explanation: Channelized intersections utilize designated lanes and physical barriers to guide traffic movements and reduce conflict points, promoting safer and more efficient traffic flow.

7. What is a key advantage of grade-separated intersections?

- a) Reduced traffic capacity
- b) Elimination of traffic signals
- c) Increased likelihood of accidents
- d) Higher construction costs

Answer: b) Elimination of traffic signals

Explanation: Grade-separated intersections, such as overpasses or underpasses, eliminate the need for traffic signals, allowing continuous traffic flow and reducing delays.

8. What is a disadvantage of rotary intersections (roundabouts)?

- a) Reduced traffic capacity
- b) Higher safety risks
- c) Increased construction costs
- d) Longer construction time

Answer: a) Reduced traffic capacity

Explanation: Rotary intersections, while effective in reducing severe accidents, may have lower traffic capacity compared to signalized intersections, especially during peak hours.

9. What is the purpose of street lighting in transportation planning?

- a) To improve road aesthetics
- b) To increase energy consumption
- c) To enhance nighttime visibility
- d) To create light pollution

Answer: c) To enhance nighttime visibility

Explanation: Street lighting is essential for providing adequate visibility during nighttime, improving safety for drivers, pedestrians, and cyclists.

10. What is the initial step in transportation planning?

- a) Trip distribution
- b) Trip generation
- c) Traffic assignment
- d) Plan preparation

Answer: b) Trip generation

Explanation: Trip generation involves estimating the number of trips originating or ending in a particular area, serving as the initial step in transportation planning to understand travel demand.