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**5th Sem / Civil, Constr. Mgmt., Civil Engg  
(Spl Highway Engg)**  
**Subject:- Highway Engineering**

Time : 3Hrs.                            M.M. : 100

**SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory                            (10x1=10)

- Q.1 The kilometer stones painted with white base and green top depict a:  
a) Village Road      b) National Highway  
c) Major District Road d) State Road
- Q.2 The portion of road visible ahead of the driver of the vehicle and clear of all obstacle is:  
a) Sight Distance  
b) Overtaking Sight Distance  
c) Stopping Sight Distance  
d) Passing Sight Distance
- Q.3 The different places having importance to be connected with the proposed road alignment are shown in:  
a) Index Map  
b) Key Map  
c) Land Acquisition Plan  
d) Detailed Location Survey plan
- Q.4 Test conducted to access the ability of a road aggregate to resist fracture under repeated load is :  
a) Impact Test      b) Ductility Test  
c) Abrasion Test      d) Penetration Test

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- Q.5 On porous untreated surface, the application of low viscosity bitumen is:  
a) Tack Coat      b) Prime Coat  
c) Seal Coat      d) Base Coat
- Q.6 Landslides which occur as a result of tension failure are:  
a) Flow      b) Complex Landslides  
c) Fall      d) Slides
- Q.7 In sub surface drainage system, the method 'providing sand blanket over full embankment width' falls under:  
a) Control of seepage flow  
b) Lowering the water table  
c) Control of capillary rise  
d) None of these
- Q.8 While repairing, the pot holes should be cut to size in:  
a) Oval Shape      b) Rectangular Shape  
c) Circular Shape      d) Irregular Shape
- Q.9 Grader is used for:  
a) Preparing Subgrade  
b) Preparing Top Surface  
c) Shaping Subgrade  
d) Site Clearance
- Q.10 The paths on the airfield surface designed for taxing the aircraft:  
a) Runways      b) Aprons  
c) Airfield      d) Taxiways

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## **SECTION-B**

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 Define expressway.
- Q.12 Define carriageway.
- Q.13 Define location survey.
- Q.14 Write two functions of road aggregates.
- Q.15 What is mud pumping?
- Q.16 List the main causes of soil erosion.
- Q.17 What is berm?
- Q.18 Define resurfacing.
- Q.19 Write the types of shovels.
- Q.20 Define runway.

## **SECTION-C**

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Define NAHI Write functions of NAHI.
- Q.22 What is camber? Give its functions.
- Q.23 Define super elevation. Explain anyone methods of providing super elevation.
- Q.24 Discuss the basic considerations governing the road alignment in hilly area.
- Q.25 What is preliminary survey? Discuss the stages to conduct it.
- Q.26 Define bitumen modifiers. Discuss the purpose of adding these materials.
- Q.27 What is the aggregates crushing value? Explain the procedure to determine it in the laboratory.

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- Q.28 What is the flexible pavement, Write its merits and demerits.
- Q.29 Define premix carpet. Discuss various construction steps for its construction.
- Q.30 Define soil erosion. Discuss the methods to control soil erosion.
- Q.31 Define sub-surface drainage. Discuss the methods of providing sub-surface drainage in roads.
- Q.32 What is the road maintenance? State the objectives of road maintenance.
- Q.33 Define corrugations in roads. State the causes of formation.
- Q.34 Write the safety measures to be taken while working in a hot mix plant.
- Q.35 Discuss the factors to be considered while selecting the site for an airport w.r.t. zoning laws.

## **SECTION-D**

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Define binder. List the functions they perform as a binder. Explain different types of binders in detail.
- Q.37 What is cement concrete road? Explain the method of construction of cement concrete roads.
- Q.38 Write notes on the following:
  - a) Dumpers
  - b) Dragline
  - c) Power shovels

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