

- Q.23 Explain sub-grade preparation from transported soil.
- Q.24 Write a short note on GSB.
- Q.25 Differentiate between WBM & WMM.
- Q.26 Write about Engineering properties of GSB.
- Q.27 What is prime coat also give its uses.
- Q.28 Differentiate between bituminous macadam & Dense Bituminous macadam.
- Q.29 How quality control for surface course is done?
- Q.30 What is Mastic asphalt? Write about its specifications & thickness requirements.
- Q.31 What is seal coat? What are the quantity of its raw materials?
- Q.32 What is liquid seal? Write about its application procedure.
- Q.33 What is slurry seal? Write about its material.
- Q.34 What is tipper used for explain?
- Q.35 What is hot mix plant? Explain its types.

#### Section-D

- Note:** Long answer Questions. Attempt any two Questions out of three Questions. (2x10=20)
- Q.36 a) How sub-grade preparation of existing soil with high water table is done.  
b) Write a short note on seal coat and its applications.
- Q.37 What is asphalt paver write its functions and types. Also explain its components.
- Q.38 What is WMM? Give its grading requirements. Also explain its proportioning & design of WMM.

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**Civil Engg. (Spl Highway Engg.)**  
**Subject : Highway Construction & maintenance**

**Time : 3 Hrs.**

**M.M. : 100**

#### SECTION-A

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

- Q.1 For places where there is a passage of flood water then the highway has to be built on \_\_\_\_.
- a) Embankment                      c) Overpass  
b) Subway                              d) Underpass
- Q.2 For the construction of water bound macadam roads, the correct sequence of operations after spreading coarse aggregates is \_\_\_\_\_?
- a) Dry rolling, wet rolling, application of screening and application of filler  
b) Dry rolling, application of filler, wet rolling and application of screening  
c) Dry rolling, application of screening, wet rolling and application of filler  
d) Dry rolling, application of screening, application of filler and wet rolling
- Q.3 \_\_\_\_\_ materials are suitable for prime coats
- a) liquid asphalt                      c) Cutbacks  
b) Road tar                              d) All of the above

- Q.4 Bitumen surfacing done on already existing impervious pavement is known as \_\_\_\_\_
- a) Seal coat                      b) Tack coat  
c) Prime coat                    d) Spray of emulsion
- Q.5 \_\_\_\_\_ is a single top coat surface dressing, provided as final step over black top roads.
- a) Seal coat                      c) Prime coat  
b) Tack Coat                    d) Spray of emulsion
- Q.6 Which of the following is considered to be the highest quality construction in the group of black top pavements?
- a) Mastic asphalt              c) Bituminous carpet  
b) Sheet asphalt                d) Bituminous concrete
- Q.7 A plant used to prepare premix carpet is \_\_\_\_\_
- a) Paver                            c) Dumper  
b) Pug mixer                      d) Hot mix
- Q.8 \_\_\_\_\_ is a light application of a diluted slow-setting asphalt emulsion to the surface of an aged (oxidized) pavement surface.
- a) Liquid seal                    b) fog seal  
c) Slurry seal                    d) Seal coat
- Q.9 The roller which compacts the road surface without causing damage to the aggregates.
- a) Pneumatic tyred roller    b) Flat wheeled roller  
c) Sheep foot roller        d) Single drum roller
- Q.10 In the penetration macadam construction, the bitumen is
- a) Sprayed after the aggregates are spread and compacted

- b) Premixed with aggregates and then spread  
c) Sprayed before the aggregates are spread and compacted  
c) None of the above

### Section B

**Note:** Objective types Questions. All Questions are compulsory. (10x1=10)

- Q.11 \_\_\_\_\_ is the machine which exerts a powerful tractive force for towing other machines.
- Q.12 Bulldozer is used for site clearance. (True/False)
- Q.13 Asphalt mixer is used for preparing hot \_\_\_\_.
- Q.14 Define liquid seal.
- Q.15 A seal coat consists of \_\_\_\_\_ layer.
- Q.16 \_\_\_\_\_ is a mixture of bitumen, calcareous or siliceous fines, sand and chippings and, in some cases natural asphalt powder.
- Q.17 \_\_\_\_\_ act as bond between the base and the wearing surface.
- Q.18 Write full form of WBM.
- Q.19 What is GSB?
- Q.20 Define curing?

### Section-C

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

- Q.21 Write a short note on statistical tools of quality control & criteria of acceptance.
- Q.22 Explain preventive measures done to control moisture ingress by geo-synthetic.