313323

24225

3 Hours / 70 Marks Seat No. | | | | | | | | |

Instructions : (1) All Questions are *compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Use of Non-programmable Electronic Pocket Calculator is permissible.

(7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following : **5 × 2 = 10**

(a) Enlist any four modes of Transportation.

(b) Classify roads according to Location.

(c) Define :

(i) Right of Way

(ii) Gradient

(d) Define side slopes in a Road.

(e) Enlist any four types of road according to material used in Construction.

(f) Define Traffic Volume Study.

(g) Define Road Surface drainage.

2. Attempt any THREE of the following : **3 × 4 = 12**

(a) State any four factors affecting the alignment of a road in plain area.

(b) State any four factors affecting design speed.

(c) State Super Elevation with a neat labelled sketch.

(d) Define Camber and enlist any four types of Camber.

3. Attempt any THREE of the following : **3 × 4 = 12**

(a) State overtaking sight distance with a neat sketch.

(b) State alternate Bay method of laying cement concrete road slab.

(c) Draw typical cross section of flexible pavement.

(d) State any four causes of Landslides.

4. Attempt any THREE of the following : **3 × 4 = 12**

(a) Draw labelled sketch of Expansion Joint and Contraction Joint in Cement Concrete Pavement.

(b) Explain rotary Island with neat sketch.

(c) State any four failures in rigid pavements.

(d) Enlist the necessity of Highway Maintenance.

(e) Draw neat labelled sketch of drain provided with grating.

5. Attempt any TWO of the following : **2 × 6 = 12**

(a) State any six advantages of providing curves on road.

(b) Draw a neat labelled cross section of National Highway in embankment showing clearly the land width formation, pavement width, location of side drains, trees etc.

(c) State any one use of following gradients :

(i) Ruling gradient

(ii) Limiting gradient

(iii) Exceptional gradient

(iv) Average gradient

(v) Floating gradient

(vi) Minimum gradient

6. Attempt any TWO of the following : **2 × 6 = 12**

(a) Enlist any six situations where flexible pavement is adopted.

(b) Explain construction of WBM road.

(c) Draw a neat sketch of two road signs for each of the following :

(i) Warning Signs

(ii) Information Signs

(iii) Mandatory Signs
