

22302

11819

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 :

10

- (a) State two characteristics of Road Transport.
- (b) Define Kerb and Right of way.
- (c) Define Camber and Super-Elevation.
- (d) Define Flakiness Index and Elongation Index.
- (e) List various types of curves provided on Hill Roads.
- (f) State the necessity of providing catch water drain in Hill Roads.
- (g) State two causes of Landslides.

- 2. Attempt any THREE of the following :** **12**
- (a) Classify the Roads according to Nagpur Road Plan.
 - (b) Define Design Speed. Give four factors affecting Design Speed.
 - (c) Define gradient. Explain types of gradient. (Any Two)
 - (d) State and explain functions of Pavement Components.
- 3. Attempt any THREE of the following :** **12**
- (a) Explain the construction procedure of Bituminous Road.
 - (b) Explain Softening Point Test on Bitumen with neat sketch.
 - (c) State different types of Tar used in construction of Road with its suitability.
 - (d) Define Passenger Car unit. Give factors affecting it.
- 4. Attempt any THREE of the following :** **12**
- (a) List causes of Accident. Draw Collision diagram for Head-on-Collision.
 - (b) Explain preventive measures that can be taken to avoid Landslides in hilly area.
 - (c) Draw a typical cross-section of Hill Road and label all component parts.
 - (d) State the functions of surface drainage and sub-surface drainage.
 - (e) Draw a neat sketch (Plan & Section) of Longitudinal drain and Cross drain.
- 5. Attempt any TWO of the following :** **12**
- (a) Calculate the Stopping Sight Distance for two way traffic in a Single Lane Road. The design speed of the Road is 60 kmph. Assume Reaction time of the driver as 2.5 sec and Co-efficient of friction as 0.6. Brake efficiency is 50%.
 - (b) Draw a neat cross-section of National Highway in Embankment.
 - (c) State the methods of construction of Cement Concrete Road. Explain any one method.

6. Attempt any TWO of the following :**12**

- (a) Draw Traffic Signs for
 - (i) Left Turn Prohibited
 - (ii) No Parking
 - (iii) Speed Limit – 60 kmph
 - (iv) Width Limit – 2m
 - (v) Narrow Bridge
 - (vi) Compulsory Ahead or Turn Right
 - (b) Explain Rotary Island (Traffic Island) with a neat sketch.
 - (c) Justify the remedial measures for following defects :
 - (i) Formation of Potholes in Case of WBM Roads.
 - (ii) Formation of Ruts in Case of Earthen Roads.
 - (iii) Bitumen Bleeding in Case of Bituminous Roads.
-

