

9. (a) Discuss the advantages and disadvantages of tunnelling over open cuts. 6
- (b) Explain different methods of providing ventilation to the tunnels. Also comment on position of lightings. 7
10. Write short notes on any (**THREE**) :— 14
- (i) Three Controls in Aircraft.
 - (ii) Exit Taxiways.
 - (iii) Airtraffic Control.
 - (iv) Tunnel linings.
 - (v) Permanent Drainage in Tunnel.

VKR/KS/13/3256/3589

Faculty of Engineering & Technology
Eighth Semester B.E. (Civil)/Eighth Semester B.E. P.T.
(Civil) Examination

TRANSPORTATION ENGINEERING—II

Sections—A & B

Time : Three Hours]

[Maximum Marks : 80

INSTRUCTIONS TO CANDIDATES

- (1) Answer **THREE** questions from Section—A and **THREE** questions from Section—B.
- (2) Assume suitable data wherever necessary.
- (3) Illustrate your answers wherever necessary with the help of neat sketches.
- (4) Use of non-programmable calculator and Drawing instruments is permitted.

SECTION—A

1. (a) Explain the various resistances which a train has to overcome before starting or to keep its motion. 6
- (b) What will be the gradient for a B.G. track when a grade resistance together with curve resistance due to 3° shall be equal to the resistance due to ruling gradient of 1 in 200 ? 7

- 2. (a) Write a detailed note on coning of wheel. Also comment on adzing of sleepers. 6
- (b) What is creep of rail ? What are the theories propounded for its cause ? 7
- 3. (a) Define Sleeper Density. Suggest an expression for sleeper density for a B.G. Track, if 19 sleepers are used under a rail length. 5
- (b) When a curve of 6° branches off a 3° main curve in opposite direction on a B.G. layout. Calculate the maximum speed that is allowed on the main line, if the speed on the branch line is restricted to 50 kmph. Assume suitable cant deficiency for B.G. line. <http://www.rtmnuonline.com> 8
- 4. (a) Discuss various classification of stations. 6
- (b) State various methods of controlling movements of Train. Explain ATC. 7
- 5. Write short notes on (any **THREE**) :— 14
- (i) Throw of switch.
- (ii) Concrete sleepers.
- (iii) Tongue Rail.
- (iv) Splice rail and point rail.
- (v) Flangeway clearance.

SECTION—B

- 6. (a) Enlist various characteristics of an aircraft. Mention clearly that which parameters, concerned with the airfield, are decided based on which characteristics and how. 6
- (b) In a proposal of upgrading an existing runway field of a city airport, following data is obtained :
 - (i) Site Elevation — 418 m.
 - (ii) Basic Runway Length — 2600 m.
 - (iii) Airport Reference Temperature = 32°C.

Compute the actual runway length required. The topographical condition is such that no effective gradient is required. 7
- 7. (a) Discuss the orientation of runway with the help of Wind-Rose Diagram. Comment on Calm Period. 6
- (b) What do you understand by the term 'Imaginary Surfaces' ? Explain each surface in detail. 7
- 8. (a) Discuss various aircraft parking configurations. 6
- (b) Explain the working of Instrumental Landing System (ILS). 7