

QP Code : 14886

(3 Hours)

[Total Marks : 80

- N.B.** (1) Question No. 1 is compulsory.
 (2) Attempt any three questions out of remaining five questions.
 (3) Assume any other data if required.
 (4) Illustrate your answers with neat sketches wherever required.

1. Attempt any four :— 20
- (a) What roles do transport infrastructure of a country play ? Enlist the different modes of transport and their characteristics.
- (b) Write short notes on: Transit sheds and ware houses.
- (c) On a particular track, the speeds of various trains are : 10 trains at 50kmph, 8 trains at 55kmph, 4 trains at 60 kmph. Calculate the weighted average speed and find out its deviation from the maximum speed.
- (d) What is the necessity of visual aids in connection with airport ? Name the different visual aids.
- (e) Draw a layout of an airport having 2 intersecting runway. Show the markings on it.
2. (a) It is observed that at present tracks, are mostly laid with Flat-footed rails. Give 8 reasons for this preference in relation to other types of rail section.
- (b) Calculate and show it in diagram the elements required to set out a 1 in 8.5 turnout 12 with switch angle of $1^{\circ}34'27''$. Use the IRS method.
3. (a) Explain the necessity of sleepers in railway track. Using sleeper density of M+6, 10 estimate the quantity of track material required for constructing a B.G railway track that is 6 km long, if the length of the rail is 13 m.
- (b) Briefly discuss the various steps involved in the construction of a new B.G railway 10 line.
4. (a) What is the ballast ? Why it is used in the railway track ? Briefly describe the 10 various types and its advantages, disadvantages and suitability.
- (b) Calculate actual length of runway required if basic length obtained is 1000 m. 10
 The airport is located at an elevation of 120m. Mean of average daily temperature is 38°C and the Mean of Maximum daily temperature is 47°C . Longitudinal section details are given below

End to end of runway (m)	Gradient(%)
1 to 400	+1%
400 to 800	-0.8%
800 to 1200	+0.6%