

(OLD COURSE)**QP Code :12049**

(3 Hours)

[Total Marks : 100

- N.B. :** (1) Question No. 1 is **compulsory**.
 (2) Solve any **four** questions out of **remaining six**.
 (3) Support **all** theory and Numericals with **neat** Sketch.

1. (a) Calculate number of rails, sleepers and all the fixtures and fastenings required for a 100 km B.G track with concrete sleeper and having sleeper density as M+7. 8
 (b) Explain any **two** :— 12
 - (i) Working of Semaphore signal.
 - (ii) Runway markings.
 - (iii) Coning of wheel and tilting of rails.

2. (a) If the basic runway length for an airport situated at elevation of 150 meter is 1200 meter, find the actual runway length required if mean of average daily temperature and mean of maximum daily temperature is obtained as 38°C and 47°C respectively. Assume the runway to be horizontal. 8
 (b) Explain construction of Type-II wind rose diagram. 6
 (c) Write note on Airport lighting. 6

3. (a) Draw neat diagram and explain about "Holding Apron". 8
 (b) Explain Maintenance of railway track. 6
 (c) Explain uniformity of gauge. What are its advantages? 6

4. (a) A 6° curve diverges from a main 3° curve in a layout of B.G yard. If speed on branch line is 38kmph, find the speed on main line. 8
 (b) Explain instrumental landing system. 6
 (c) Write a note on Airport drainage. 6

5. (a) An airport has 4 gates which are available for all the aircraft. It serves three classes of aircraft having mix and average occupancy times during peak hour as follows : 8

Aircraft class	Mix (%)	Average occupancy time in minutes
1	30	60
2	50	45
3	20	30

- If maximum gate utilization factor is 60 %, find the capacity of gates.
 (b) Explain negative super elevation and write the value of cant deficiency permitted for various gauges in India. 6
 (c) Explain various theories of creep. 6

[TURN OVER